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Vol. XIX, No. 2 SASKATOON, SASK. JUNE, 1961

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g grounds of the Arctic Tern, south shore Lake Athabasca Photo by F. W. Lahrman

Published quarterly by
THE SASKATCHEWAN NATURAL HISTORY SOCIETY
REGINA, SASK.

BLUE JAY CHATTER

Let's Start a Wildlife Refuge

As the **Blue Jay** goes to press the prospects for many forms of wildlife on the prairies look grim. Because the ground was dry last fall the snow soaked away leaving the sloughs dry or very nearly so. Farmers everywhere will be tempted to break their low spots.

Having protested against government-assisted drainage of important wetlands, we are happy to see that the Saskatchewan Government has passed a Bill during this session recognizing the rights of recreation and wildlife in the use of water. We hope that this means that every effort will be made to conserve water and wetlands. Another hopeful sign lies in recent statements by the Honourable A. Hamilton, Minister of the Canada Department of Agriculture, suggesting that the federal government will actively help in providing for our migratory birds.

Yet I think that we naturalists must show that we really want to conserve our wildlife and want refuges for their use. The gravity of the situation is indicated by a statement made on November 10, 1960, by a prominent Canadian Wildlife biologist: "Figures that I have seen indicate that the Big Duck Factory will have all of its duck-producing areas drained or earth-filled in 25 years. There will no longer be a harvestable crop of ducks."

Alarmed at this situation, the Federation of Ontario Naturalists at its 1961 annual meeting urged the Ontario Government to make an immediate survey of the wetlands of southern Ontario. On the prairies in spite of the large expenditures made by Ducks Unlimited the situation must be considered very serious since the United States Government is setting aside funds from the sale of "duck stamps" (see back cover) for the possible purchase of marshlands in Canada.

What are we doing in Canada? Perhaps the only people who are really doing anything now are the farmers who recognize the importance of each little bluff and pothole and retain them on their land as the kind of habitat that encourages wildlife. What about the rest of us? Chances are, if you ask your neighbour, he will only be able to reply, "Well, I don't hunt, but I bought an American duck stamp." So we send our money to the States to buy lands for wildlife in the States, and perhaps some of it may be sent back to buy lands in Canada!

What further action can we take in Canada? Could we have a wildlife stamp, with proceeds to go only to the purchase of lands for wildlife, issued each year? In the States the stamp costs three dollars and every waterfowl hunter must buy one. Perhaps ours could sell for a dollar as the American stamp did when introduced 28 years ago. Sale of stamps in the States to non-hunters is steadily on the increase, and we are sure that many non-hunting Canadians would like to see more land available for wildlife. To inaugurate a Canadian wildlife stamp let's write individually to the Minister of Northern Affairs and National Resources, Ottawa, and to our M.P. requesting a program for the purchase and development of lands of refuges.

Another approach is for groups of interested people, like our Society, to buy land as the beginning of a refuge program We know of lands in areas vital to wildlife, where farmer's crops are suffering depredation, which are available for purchase. We could acquire some of this as a pilot project and use lure crops to help keep wildlife from nearby farms. This land could be turned over to the Provincial Government as soon as the latter is ready to sponsor refuges. Let us see how much land we can buy.

Send a donation of one dollar, or five or ten dollars, or as much as you can, to the Special Refuge Fund, c/o The Editor, 2335 Athol Street, Regina. Mark your cheque clearly as "refuge donation" for this special project, and come prepared to discuss the whole project at the June meeting, June 16.

GEORGE F. LEDINGHAM.

The Blue Jay

Published quarterly by the Saskatchewan Natural History Society
Founded in 1942 by Isabel M. Priestly
Authorized as second class mail. P.O. Department, Ottawa

Vol. XIX, No. 2. JUNE, 1961 Pages 57-104

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IN MEMORIAM

Donald Strathearne Rawson, 1905-1961

by **J. G. Rempel,** University of Saskatchewan, Saskatoon

Our Society lost a valued member, and the University of Saskatchewan lost a popular Head of the Department of Biology when Dr. D. S. Rawson died suddenly on February 16, 1961.

Donald S. Rawson was born in Claremont, Ontario, on May 19, 1905. He graduated with a doctorate in limnology from the University of Toronto when he was only 24 years old. He joined the Biology Department of the University of Saskatchewan soon after graduation and became Head of the Department in 1949. The new W. P. Thomson Biology Building was to a large extent his creation, and those who joined with him in celebrating its opening last fall — fellow workers and students he trained — will long remember this friendly and learned man.

Dr. Rawson was married to Hildred Patton, B.A. (Toronto) in 1932 and is survived by his widow, by two sons (Bruce, with NFCUS in Ottawa, and Eric in the Department of Physics at Toronto), and one daughter Mary (Mrs. E. A. Tollefson of Saskatoon).

Dr. Rawson's studies in limnology fall into distinct periods. From 1928 to 1934 his interest was concentrated on the lakes of the newly established Prince Albert National Park. This work involved physicochemical, biological and fisheries studies, and specific experiments in fisheries management. In the period 1935-41 he carried on extensive research in the national parks of the Canadian Rockies and at Riding Mountain National Park in Manitoba. Although all these investigations had as their primary aim the collection of limnological information to be applied in fisheries-management problems, contributions of fundamental significance also resulted. It can be said of him that as a scientist he spanned the gap between the theoretical and the applied in a way that is most important today when gaps are tending to grow wider and wider.

In 1942 he began his work on the large northern lakes — Reindeer, Athabasca and Great Slave — work that brought him fame far beyond the confines of his native Canada. After 1947 he devoted most of his attention to investigations in the Lac la Ronge and Amisk Lake areas. Through all these studies, reported in some sixty publications, the northern Canadian lakes have become as familiar to freshwater biologists all over the world as any of the "classic" lakes of limnology.

Practical aspects of research attracted his attention. Thus, following his extensive limnological investigations in the province, he was instrumental in setting up a sound fisheries program in Saskatchewan under the jurisdiction of the Department of Natural Resources. He also played an important part in the founding of the Canadian Society of Wildlife Fishery Biologists.

Members of our Society will recall Dr. Rawson being our guest speaker at the annual meeting in Yorkton in October, 1954, when he gave us an illustrated talk on the methods used by his students in studying the lakes and the fish of Saskatchewan. He was made a director of our society in 1954 and served in that capacity for six years. His death represents a real loss to natural history as well as to limnology in Saskatchewan.

Clarence Stuart Francis, 1903-1961

by **Maurice G. Street**, Nipawin, and **Elwin Baines**, Tisdale

On January 29 death came to Clarence Stuart Francis of Torch River, Saskatchewan, well-known naturalist, conservationist and tree farmer.

Stuart, as he was known, was born July 17, 1903, in Sussex County, England, and came to Canada when he was eleven. He attended Crescent Lake and Peachview Schools in the Saltcoats district. As a young man he homesteaded in the Torch River district, clearing away the native white and balsam poplar by hand axe since this was before the day of the bulldozer and scrub cutter. He pioneered in growing strawberries and later became the first tree farmer in Saskatchewan; he was so certified in October, 1955. Many will recall his talk on Tree Farming given at the annual meeting in Yorkton, 1954. Stuart kept a small bird sanctuary on his farm and for some years held a bird banding permit. Animals and flowers were also of interest. His favorite sport was fishing in northern lakes.

The members of the S.N.H.S. extend sympathy to Mrs. Emma Francis, to his sons Stuart and Stanley, and to his mother, Mrs. Ethel Maddaford. He was a director of our Society for six years and his contributions to the Society will be greatly missed. Naturalist friends of Stuart Francis are paying tribute to him by placing in all schools in the Nipawin Larger School Unit copies of **The Birds of the Saskatchewan River** inscribed as follows: "Presented to .... School, in memory of the late C. Stuart Francis, naturalist, conservationist, tree farmer, of Torch River, Saskatchewan."

A gracious tribute is also paid to Stuart Francis in the memorial poem written by his friend Eric A. Dowson of Nanaimo, B.C.:

HE LOVED ALL BEAUTY

He found joy in life's common things,
Birdsong and sunset skies,
In groves of spruce and spreading fields
Where vagrant beauty lies.

He loved life in his country home
Where parkland vistas roll.
He loved all things that nature made,
A gentle, quiet soul.

The groves of trees he planted out
While trunk and limb shall grow
Shall be his fair memorial
Reflecting beauty's glow.

The Arctic Tern in Saskatchewan

by **Robert W. Nero,** Saskatchewan Museum of Natural History

Photos by F. W. Lahrman, S.M.N.H.

View of south shore of Lake Athabasca, looking east to Beaver Point

During May, June and July, 1960, a party from the Saskatchewan Museum of Natural History, Department of Natural Resources, consisting of Ralph D. Carson, Fred W. Lahrman and myself, conducted a survey of the birds of the Uranium City area and adjacent Lake Athabasca*. The full results of this work are in preparation; the objective of the present report is to describe our observations of the nesting of the Arctic Tern (*Sterna paradisaea*) on the south shore of Lake Athabasca, 35 miles southwest of Uranium City.

We were on the lake on 15 different days, from June 10 to July 26, and during this period we also spent seven days on the south shore of the lake, between Beaver Point and the William River. We travelled in an 18-foot outboard motorboat owned and operated by Albert Scarfe (Dept. of Mineral Resources, Uranium City) and also had the use of a similar boat belonging to the Dept. of Natural Resources. We are especially indebted to Al Scarfe as well as to Grant Fladager, Conservation Officer, for assistance in this respect. James Baillie, Jr., Royal Ontario Museum of Zoology, kindly made available T. M. Shortt's unpublished Lake Athabasca bird records. Dr. John W. Aldrich, U.S. Fish and Wildlife Service, sent me a copy of a list of birds collected by a Biological Survey party on Lake Athabasca in 1920. Dr. Raymond A. Paynter, Jr., Museum of Comparative Zoology, and Dr. Herbert Friedmann, U.S. National Museum, provided information on certain specimens in their respective collections. Dr. Francis Harper, Chapel Hill, North Carolina, read the manuscript and freely offered advice and encouragement.

Previous Records and Status

The first record of an Arctic Tern in Saskatchewan was obtained by Francis Harper, who found this species to be common from June 26 to 30, 1914, at the mouth of the Charlot River (northwest of Black Bay, north shore of Lake Athabasca) "where they were presumably breeding" (Harper, 1915). The first specimen was collected on June 27, 1914 (pers. corres., 1916). Harper was the zoologist of a party from the Geological Survey of Canada which made a traverse from Lake Athabasca to Great Slave Lake by way of the Tazin and Taltson Rivers in the summer of 1914 (see: Harper, 1931, for a discussion on the ecology of the area). Six years later, Harper, while chief of a U.S. Biological Survey party which included Hamilton M. Laing and J. Alden Loring, definitely established the breeding status of this species when he collected an adult male Arctic Tern (U.S.N.M. #283461) and a chick (M.C.Z. #231651) on August 7, 1920, at a point about three miles south of Poplar Point (on the east end of Lake Athabasca). On August 9, an immature (M.C.Z. #231650) was collected on an islet about three miles east of the MacFarlane River. Additional sight records of suspected Arctic Terns were made at Poplar Point, August 12; south of the islands off Crackingstone Point, July 25; and at Maurice Point, August 20.

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* Currently accepted spelling.

In 1921, E. W. Nelson, Chief of the U.S. Biological Survey, sent to the Saskatchewan Museum of Natural History (then the "Provincial Museum") a list of the specimens collecter on Lake Athabasca (in Sask.) by the 1920 survey. This list and comments by Nelson were published by Bradshaw (1921). The Arctic Tern chick, which had evidently not been certainly identified at the time, is not specifically mentioned, the report stating only that the Arctic Tern was found "apparently on its breeding ground. . . ." A similar statement was later published by Mitchell (1924). No further information on the Arctic Tern in Saskatchewan seems to have been published.

The above records are apparently the basis for the inclusion, by the A.O.U. Check-list Committee, of northeastern Alberta and northwestern Saskatchewan (Lake Athabasca) within the breeding range of this species (A.O.U. Comm., 1957). T. M. Shortt, who worked on Lake Athabasca from June 10 to July 22, 1945, did not record the Arctic Tern (unpublished records, R.O.M.Z.). Salt and Wilk (1958), in their recent **Birds of Alberta**, say only that there are several records of Arctic Terns from Lake Athabasca. Snyder (1957) does not include Lake Athabasca within even the summer range and the nearest breeding locality reported by him is in the Northwest Territories about 300 miles northeast of Uranium City. However, in 1901, Preble (1908) found Arctic Terns breeding on the lower Slave River (and on Great Slave Lake) about 200 miles northwest of Uranium City.

OBSERVATIONS

With the meagre published information referred to above in mind we naturally were looking for Arctic Terns and hoped to find nest sites. On June 15, on our third trip on the lake, we collected two Arctic Terns at a Common Tern (*Sterna hirundo*) colony near Prospectors Bay on the north shore of Black Bay. One of these was evidently a member of a pair; the other had been perched on a rock on the islet on which the Common Terns were nesting. We recognized Arctic Terns in the air only with considerable effort. The quick erratic movements of the bird, plus the movements of our boat, made it difficult to get a good look at them, and when we were on solid rock it was still difficult. We found the blood-red beak to be the best distiguishing character; and in general, the orange color of the beak of the Common Tern, plus the black area near the tip (on both mandibles), was strikingly different when seen in good light at close range. The appearance of some Arctic Terns with blackish color on at least the upper

Field sketch by Fred W. Lahrman

Beak of male Arctic Tern collected June 15, 1960 showing extent of black pigmentation.

mandible was confusing. The male collected on June 15 had a very noticeable black area on the beak (see sketch); a breeding female collected on July 8 and a male on July 10, also had this character. The black mark was not as extensive as in Common Terns, and did not prevent our noticing the really blood-red color of the rest of the beak. Ridgway (1919:499) states, probably on the basis of dried and discolored museum specimens, that the bill tip is usually blackish. Peterson (1947) says the bill is blood-red to the tip, but adds that in fall adults the bill (and feet) become quite dusky (solid black according to Pough, 1953). Peterson **et al** (1954) state: **"wholly blood-red** bill (wholly blackish in winter, and tip may still be black in spring)." Comparisons with the Common Tern on this basis are complicated in that some Common Terns "lose the black bill-tip for a while in late summer" and some individuals of both Common and Forster's Tern (*Sterna forsteri*) may lack the usual black tip (Peterson, 1947). Earl Godfrey considers the higher pitched voice of the Arctic Tern the best means of distinguishing it from the Common Tern (Godfrey, 1954). This call, plus the beak color and the noticeably shorter legs when perched, should identify it, but where possible, specimens ought to be collected to establish its identity outside of its known range.

On June 18 we returned to the same Common Tern colony and, suspecting that Arctic Terns were also nesting here, set up a blind and patiently checked the occupants of each nest. Although all of the residents proved to be Common Terns, one Arctic Tern was seen contesting with a resident Common Tern. We came back again on June 30 and once more checked nest occupants in this colony as well as in a smaller colony on an adjacent islet, but again found only Common Terns. However, on this date we collected another Arctic Tern from the resident flock which hovered over our heads. A final check made on July 5 was also negative, although one individual briefly seen resting in the colony appeared to be an Arctic Tern. However, our time was limited and as we felt it was useless to check further in this area, the search was abandoned.

We then proceeded, as earlier planned, to visit the south shore of Lake Athabasca, in particular the immense sand dune area found in this region. We left Bushell (which is the port for Uranium City, at the head of Black Bay) on July 7, accompanied by Al Scarfe and his young nephew, Jim Prpick. Owing to sudden rough water we were forced to camp overnight on Johnston Island. Early the next morning we made a good crossing on calm water, landing easily on a wide sand beach at Beaver Point. (We were told that ordinarily it is difficult to land in this region because of the wide expanse of shallow water over offshore sand flats. However, the lake level in 1960 was very high). A few unidentified terns and a jaeger were seen en route. Later in the day after investigating the extensive spruce and jack pine forest on top of the high ridge at Beaver Point, we moved to set up camp at the base of a dune, about five miles west of Beaver Point. (Poplar Point, the site of the 1920 record, is about 42 miles northeast of Beaver Point.) The open dunes in this region occupy about 36 square miles, ranging inland four to six miles, and up to 10 miles in length, between Beaver Point and the William River (west of the William River, there are dunes occupying an area of about 100 square miles). These dunes are, to a large extent, so extensive and devoid of vegetation that they often cast a pinkish reflection on the clouds overhead, which may be seen many miles away. However, there are extensive patches of spruce and especially jack pine at places along the beach terrace, and adjacent to springs, creeks and interior lakes. The very fine sand which comprises these large dunes is supposed to come from the weathering of underlying sandstone bedrock (Athabasca formation) which forms the entire southern edge of the lake and which extends nearly to Wollaston Lake on the east and south to Cree Lake (Gussow, 1959).

Our camp was located on a stabilized dune next to the beach and beside a stand of white spruce. In the massive sand dunes which surrounded our island of forest one could see both living trees being buried and the weathered stumps of long-buried trees being uncovered. The dune landscape on the whole was austere, yet dramatic and exciting; the dark, almost black, spruce clumps provided a welcome contrast with the vast open areas of clean-swept sand. We found cast up on shore one or two objects attributable to recent man, but otherwise the region was pleasantly unspoiled and wild. Tracks in the sand daily told the story of secretive and nocturnal animal activities; wolf tracks near our tent were examined with considerable elation, and moose and bear sign was common. The bird life was varied but not plentiful, about 30 species being recorded on our first three days in the area. While on the south shore we were frequently plagued by wind and blowing sand, rain and innumerable blackflies and mosquitoes, but we thoroughly enjoyed our visit. Francis Harper recently recollected his own experiences in the area: "All of this brings back some fond memories of our little party's experience on Athabaska more than 40 years ago. Like you, we had been attracted over to the south shore by the sandy-hued reflections in the sky above the marvellous sand-dune country. Our days at Poplar Point and MacFarlane River were few but glorious." (Pers. corres., 1961).

Archaeological remains are often found uncovered in sand dunes and it was mainly in a search for such sites that we hastily set out from camp late in the afternoon on July 8. Carson and I climbed an immense dune close to camp and almost at once were astonished to see a tern attacking a Sparrow Hawk (*Falco sparverius*) which was evidently nesting in a dead white spruce which projected above the edge of the dune. After the bird was identified as an Arctic Tern, it was collected, and when a second tern suddenly appeared and hovered over the fallen bird, it too was collected. Upon examination we found that we had collected a male and a female Arctic Tern, both of which appeared to be in full breeding condition. Startled and perplexed at this unexpected occurrence of Arctic Terns, we continued walking along the top of the dune. A few minutes later, while examining firestones and flint chips in a prehistoric camp-site, which we found about 150 yards away, we made the then astonishing discovery of two brown eggs, unmistakably tern eggs, lying in a shallow depression on the bare sand. It was at once clear that this was an Arctic Tern nest and that we had collected the resident pair. This nest site was about 350 yards inland from the beach and about 75 to 100 feet above the lake level.

The rate at which the sand shifts in these dunes when the wind is blowing was amply demonstrated at this time, for when we returned with Lahrman to photograph the site, about 20 minutes later, the eggs were already partly buried. Both eggs were pipped, so they were carried back to camp and carefully incubated "by hand" by Carson during the night. One chick which survived and hatched the next day was prepared a day later as a specimen.

Several other terns were seen in the vicinity after we photographed the nest. One briefly attacked a Raven (*Corvus corax*) which was walking on the ground. This led us to suspect the presence of other nests but we were unable to find any. Many of the terns which were seen at this time (and later) were carrying minnows, presumably to be fed to young birds or to incubating

Eggs of Arctic Tern. Note contrast between the dry nest protected by the incubating bird and the rain-marked wet sand around it.

mates. (A tern collected at a later date was carrying a five-inch minnow, apparently an Emerald Shiner (Lake Shiner) (*Notropis atherinoides*). Small fish captured in the offshore shallow water of the lake appeared to be a major source of food; terns were daily seen fishing offshore, even in the roughest weather.) Careful attempts to follow terns led us over the dunes about two miles inland, and from this point we could still see terns flying even further inland. All of these terns flew in very erratic and swift flight and were difficult to follow.

On the next day (July 9) while hiking in the dunes trying to locate other nests, we saw a tern suddenly fly up from a distant ridge. Fortunately, two of us who were far apart at this moment both happened to see the bird leave the ground. We proceeded directly to the spot and by carefully searching where our paths crossed soon found the nest which contained one egg. At our approach to the nest, and while we were still some distance, the first tern had flown up high above the nest site and was immediately joined by another. The first bird hovered over the site briefly then approached us and hovered overhead, giving an alarm cry like that of the Common Tern. Then the pair shortly flew away and were not seen again while we were in the vicinity of the nest. We returned later in the day, built a blind of stumps about 50 feet from the nest and left Lahrman in it, half-buried in the sand, but after two hours the birds had still not returned. On the following cloudy and misty day, however, both birds returned to the nest, permitting a series of photos and observations from the blind. Lahrman's field notes follow:

JULY 10:

10:30 a.m.—A tern arrives and settles on nest three minutes after Al Scarfe's departure. Bird very alert on nest, head constantly turning in a watchful attitude. Once it gave a low "tete-tete" call. Assumed to be the female.

10:45 a.m.—It called again in a similar manner and I could hear a distant bird answering "tek-tek". Then she walked off nest, calling steadily "tete-tete-tete" with open beak. Suddenly the male appeared before her calling "tek-tek-terr" then evidently fed her. The male then quickly flew up out of my sight, the female called as before, walked a few steps further, then turned and started walking toward the nest. But the male suddenly dropped onto the nest and the female then flew away. Presumed male bird sat on nest with head very high and appeared very unsettled. A minute later he silently flew off and the female immediately returned to the nest and settled down.

12:12 p.m.—Female on nest called "tek-tear, tew-tew-tew" to a passing tern which called "tek-tearr" several times.

12:16 p.m.—Female suddenly called "tek-tek; te-te-te-te" and constantly "te-te". Male called "tear, tear". Female faced downwind (op-

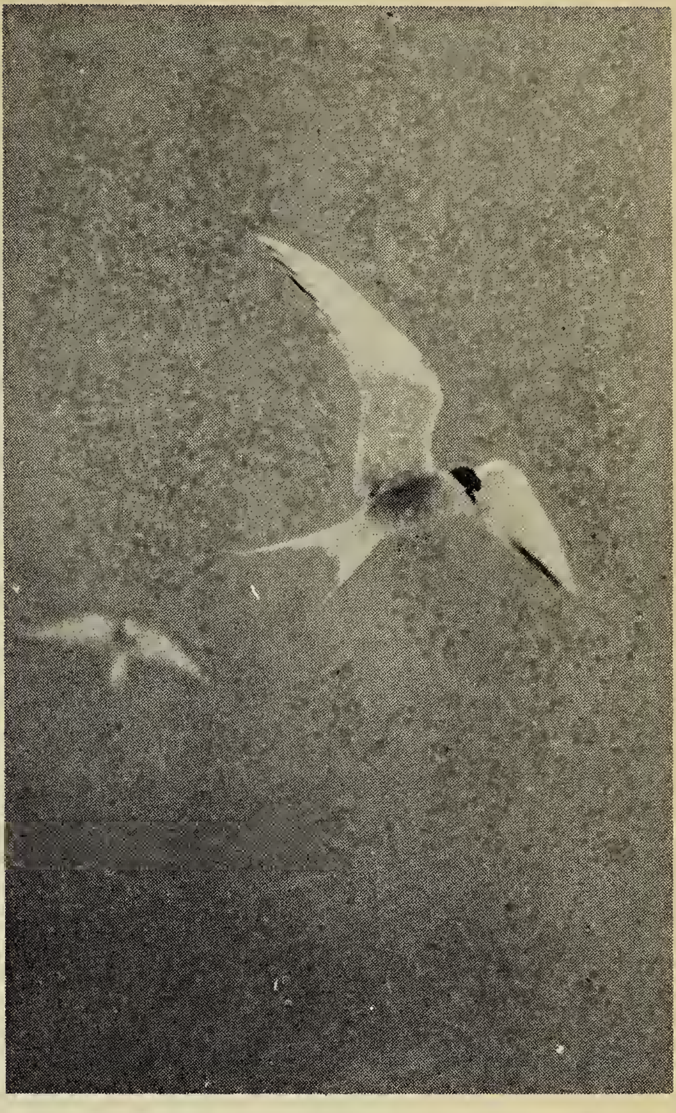
Arctic Tern incubating, Lake Athabasca, July 10, 1960 posite to normal position), male swooped down and fed her a minnow in one swoop with scarcely a pause in flight, and departed silently. Female shuffled about to face wind again.

12:25 p.m.—Female suddenly called "tek-kew, tek-kew" and held head and neck outstretched and flat on the ground with open beak as a passing tern called "tearr."

12:42 p.m.—Female behaved in similar manner as above but I heard no call from another tern as before.

1:10 p.m.—Female called as before (when being fed) and walked a few inches away from the nest. The male alighted—fed the female a minnow, then flew up and alighted again about six feet from the nest. The female flew up but I could see her shadow flitting over the sand as she hovered about; meanwhile, the male stood by for about one minute; then he started walking toward the nest, flew to the nest and settled down as before with his head held high. He remained in this posture for about a minute, then called "tick-tick" a few times and flew off. The female at once returned and sat on the nest. I left the blind at 1:30 p.m.

On this same day (July 10) a further attempt was made to find nests in other areas. Terns were seen everywhere we searched, but their habit of leaving the nest at a distance of a quarter of a mile or so at our approach, suddenly springing up from a ridge, first flying towards us and then away from us, made nest-finding difficult. However, in the evening Lahrman discovered two nests less than one-quarter of a mile east of the location of the first nest we had found. At his approach to this new area several terns flew toward him, hovered overhead with alarm cries, and then by their presence and behavior revealed their nests. I joined Lahrman at this time and took notes while he photographed the birds and their nests. A pair which had one egg and one newly-hatched young were especially vigorous in demonstration, actually striking our heads repeatedly (as reported by others, e.g., A. Twomey **in** Taverner and Sutton, 1934). Another bird remained on the second nest (which contained two eggs and which was about 90 yards away from the first) until very closely approached by us. Both pairs of birds remained at their nest sites during the course of half an hour or more. Of course, we were very surprised by this behaviour which contrasted so strongly with that of the other terns which we had previously encountered.



At some nests, Arctic Terns showed considerable aggressive behaviour, swooping at intruders.

We left the south shore on July 11 for our home base, and returned again on July 22 after having been forced to "wait out" bad weather for three days on Long Island. On this second trip we were transported across the lake by Grant Fladager and one of his assistants, Raymond Heron. Carson, Lahrman and myself were left on the south shore from then until we were picked up early in the morning of July 26 by Al Scarfe. During the four days of our stay we attempted to explore the dune area further and made two lengthy trips. On July 22 we walked inland about six miles to the limit of the dunes. About four miles south of the coast we encountered two large flocks of terns, about 100 in all, that appeared to have young in the area. These two groups had been resting on the tops of large pebbly ridges where we found numerous tracks, droppings, and some possible nest-scrapes. Although we searched the area for a considerable time we were unable to find any active nests or young. Red Fox (*Vulpes fulva*) tracks were very numerous and we saw many indications that they were preying on the terns. In one place we found Arctic Tern shell fragments and signs which suggested that a fox had robbed a nest and had been mobbed by terns. Fox scats which we found in the vicinity contained numerous tern feathers. Late in the afternoon on our way back through this region, we actually startled a Red Fox from these open sands. Inland, where the sands of this small desert ran into a series of lovely lakes, Arctic Terns were even seen perched on top of black spruce trees, an extraordinary sight.

On July 24 we checked the nests which we had found previously. The nest where we had set up a blind had one egg which was still being incubated. At the other two nests, three young were found which were half-grown and could run rapidly. When we caught up to one scurrying young it suddenly stopped, crouched down and remained motionless. We watched the young from one nest run off at our approach, then stop and hide beneath or beside a log or stone. When the parent bird settled on the ground some distance away, the young gradually walked back until they were at her side. If this is usual behaviour it would help account for our inability to find the young at other nest sites. (Parmelee and MacDonald, 1960, report a chick 12 days old about 150 yards from its nest).

On the following day (July 25) we made a six mile walk across the dunes to the William River, and again saw terns everywhere throughout the area. A single nest with two eggs, one just pipping, was found on an extensive pebble plain in this region, and dozens of nearby terns which drifted overhead and which also perched on the ground suggested the probability of many other nests. Terns were also seen fishing in the sandy waters of the William River and returning to the dunes on this side. Strangely, we never saw young on the wing, and presume that the young continue to walk about on the sand for long distances after they have reached a considerable size. There was much evidence for this in the numerous tern tracks which we found traversing nearly every dune. Although in the end we found only five active nests, we had ample reason to believe that there were actually hundreds of terns nesting in the dune area.

Their habit of solitary nesting and their wary behaviour presumably represents an adaptive response to breeding on a mainland where they are apparently subject to predation by skunk, wolf, and, probably most important, fox. Colonial habits under these circumstances would appear to be disastrous, although the mobbing behaviour at a large colony would undoubtedly pose a threat to some extent. Parmelee and MacDonald (1960) state that the Arctic Tern is well known for its ability to defend its eggs and chicks against enemies, but they also report that on Ellesmere Island dogs, which occasionally ventured into tern territory, were attacked though "not effectively." Hawksley reports (1957:70) "The Arctic Tern's habit of frequently nesting singly on the mainland in Arctic regions may be effective in reducing predation, especially from mammalian predators such as the Arctic Fox."

Arctic Terns are reported to nest in varying numbers and in varied fashion. Grinnell (in Bent, 1921) in Alaska did not find them in colonies, nests seldom being within 100 yards of each other. Some were found nesting on the tundra a quarter of a mile from the nearest lake. On the other hand A. Twomey found ten thousand nesting on islands near Churchill, Manitoba, nests being only a few feet apart (Taverner and Sutton, 1934). It is of some interest to note, too, that although this circumpolar species breeds primarily in the Arctic they normally range southward along the Atlantic coast, breeding commonly off Massachusetts, some 500 miles farther south than anywhere else in the world (Pough, 1953). According to Pough "the 22,000 mile

Two Arctic Tern chicks

roundtrip flight from Arctic to Antarctic, formerly attributed to this bird, making it the long-distance migrant champion of the world, is certainly not characteristic of the entire population, though it may well be accomplished by a few individuals." Taverner (1945) remarks appropriately: "It is remarkable that it has not been observed more often in our southern latitudes . . . ."

LITERATURE CITED

American Ornithologists' Union Committee. 1957. Check-list of North American Birds, Fifth Edition.

Bent, A. C. 1921. Life Histories of North American gulls and terns. *U.S. Nat. Mus. Bull.* 113. (Reprinted by Dodd, Mead and Co., New York, in 1947).

Bradshaw, F. 1921. Report of the Chief Game Guardian, pp. 1-53. *Annual Report Dept. Agriculture* 1921, Gov't of the Province of Saskatchewan, Regina, Sask.

Godfrey, W. E. 1954. Birds of Prince Edward Island, *Ann. Rep. Natl. Mus.,* Bull No. 132., 1952-53.

Gussow, W. C. 1959. Athabasca formation of western Canada. *Bull. Geol. Soc. Amer.,* 70: 1-18.

Harper, F. 1915. The Athabaska, Great Slave Lakes Expedition, 1914. *Geol. Surv. Dept. Mines.* Summ. Rep. 1914. Sessional paper No. 26, pp. 159-163.

1931. Physiographic and Faunal areas in the Athabaska and Great Slave Lakes region. *Ecology,* 12: 18-32.

Hawskley, O. 1957. Ecology of a breeding population of Arctic Terns. *Bird Banding,* 28; 57-92.

Mitchell, H. H. 1924. Birds of Saskatchewan. *Canad. Field. Nat.,* 38: 101-118.

Parmelee, D. F. and S. D. MacDonald. 1960. The birds of west-central Ellesmere Island and adjacent areas. *Natl. Mus. Canada,* Bull. No. 169.

Peterson, R. T. 1947. A field guide to the birds. Houghton Mifflin Co., Boston.

Peterson, R. T., G. Mountford and P. A. D. Hollom. 1954. A field guide to the birds of Britain and Europe. Houghton Mifflin Co., Boston.

Pough, R. H. 1953. All the birds of eastern and central North America. Audubon Guides. Doubleday & Co., Garden City, N.Y.

Preble. E. A. 1908. A biological investigation of the Athabasca-Mackenzie region. *Bur. of Biol. Survey,* N.A. Fauna No. 27, pp. 574.

Ridgway, R. 1919. The birds of North and Middle America. *Bull. U.S. Natl. Mus.* No. 50, Part 8.

Salt, W. R. and A. L. Wilk. 1958. The birds of Alberta. The Queen's Printer, Edmonton.

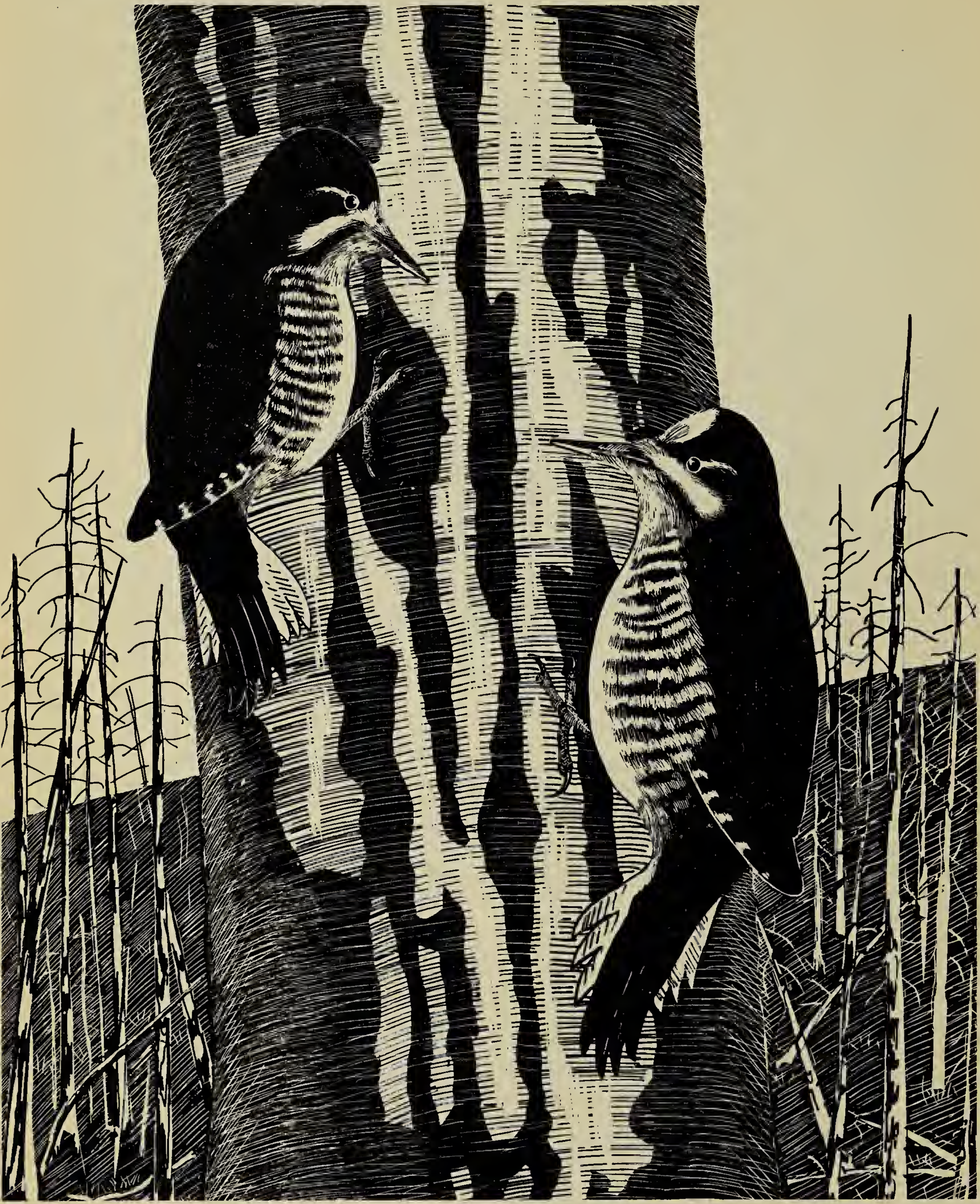
Snyder, L. L. 1957. Arctic birds of Canada. Univ. of Toronto Press, Toronto.

Taverner, P. A. and G. M. Sutton, 1934. The birds of Churchill, Manitoba. *Annals Carnegie Museum,* Vol. 23.

Taverner, P. A. 1945. Birds of Canada. Musson Book Co., Ltd., Toronto.

The Black-backed Three-toed Woodpecker

by **David Stirling**, Victoria, B.C.



Drawing by Raymond Barnes, Victoria

A pair of Black-backed Three-toed Woodpeckers at work on a charred snag.

Black-backed Three-toed Woodpecker (*Picoides arcticus*) is the tongue twister name of this rather scarce resident of the northern forests across the continent. Only after a spring fire kills a tract of standing timber do three-toed woodpeckers appear in considerable numbers. The reason for this increase is the ever-expanding food supply in the form of bark beetles and engraving beetles. These insects have attacked both dead and injured trees after the fire and as a result of the increased food supply a population explosion occurs. Millions of larvae tunnel into the cambium layers of these trees, and many fire-distressed trees that normally would recover are killed because of the heavy beetle infestation.

The presence of three-toed woodpeckers is indicated by infested trees that have been almost stripped of bark. Sometimes a bird will spend days or even weeks working on a single tree. Often isolated "beetle trees" are nearly denuded of bark by one of these woodpeckers. It is possible that this bird is an important factor in limiting outbreaks of tree-destroying insects of the families Scolytidae and Buprestidae.

Early last spring, when in the Cariboo, I walked through a blackened region which had been swept by fire the previous year. Everywhere I saw the signs where three-toed woodpeckers had been working during the winter. Presently I heard a sharp "pic-pic-pic" and saw a flash of yellow. A male bird on a charred Douglas fir had turned his head showing his colourful crown patch.

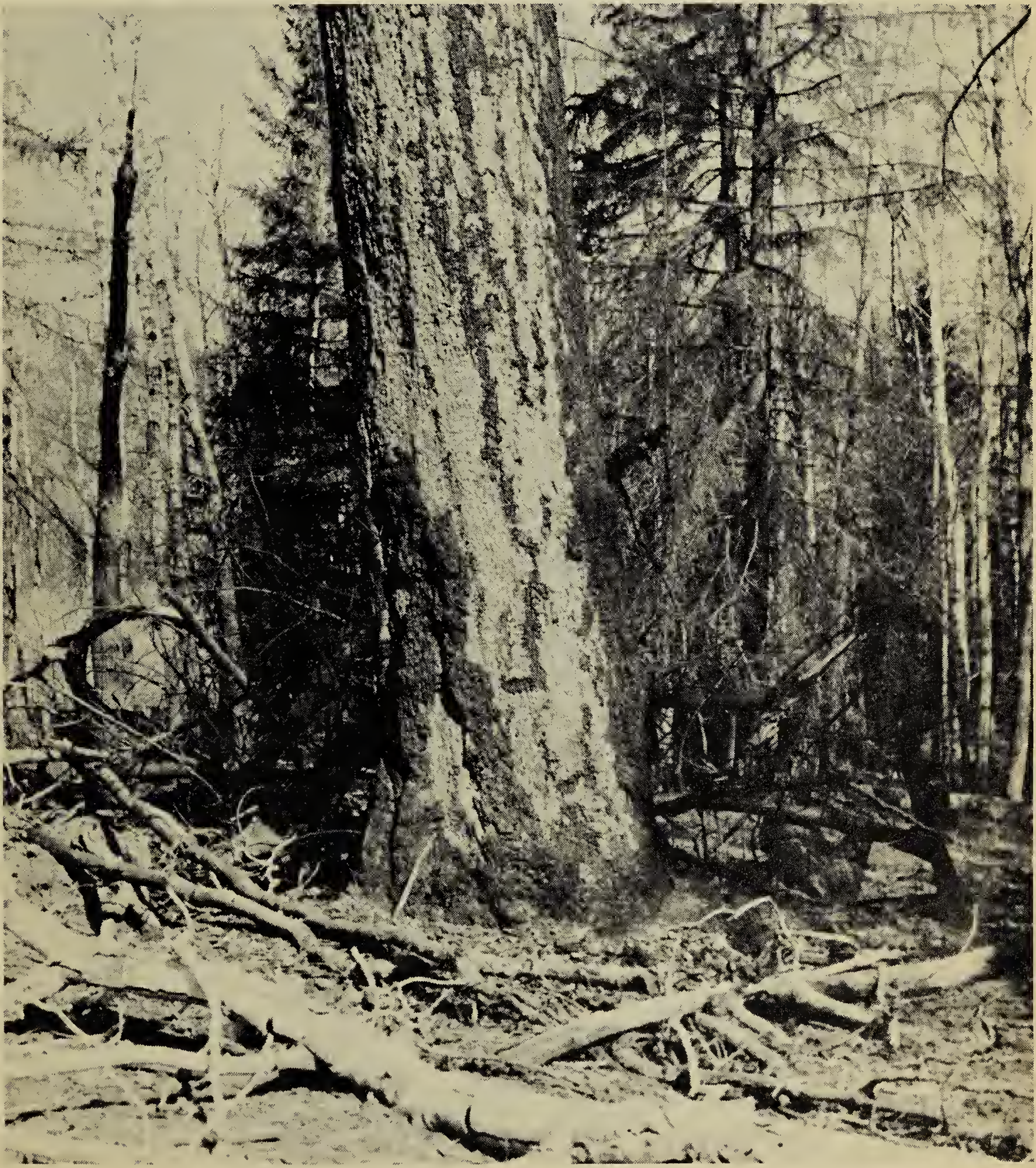


Photo by D. Stirling

A well-worked Douglas fir. In this instance only the outer layer of the heavy bark has been chipped off.

Summer Observations of Birds In Northern Saskatchewan, 1960

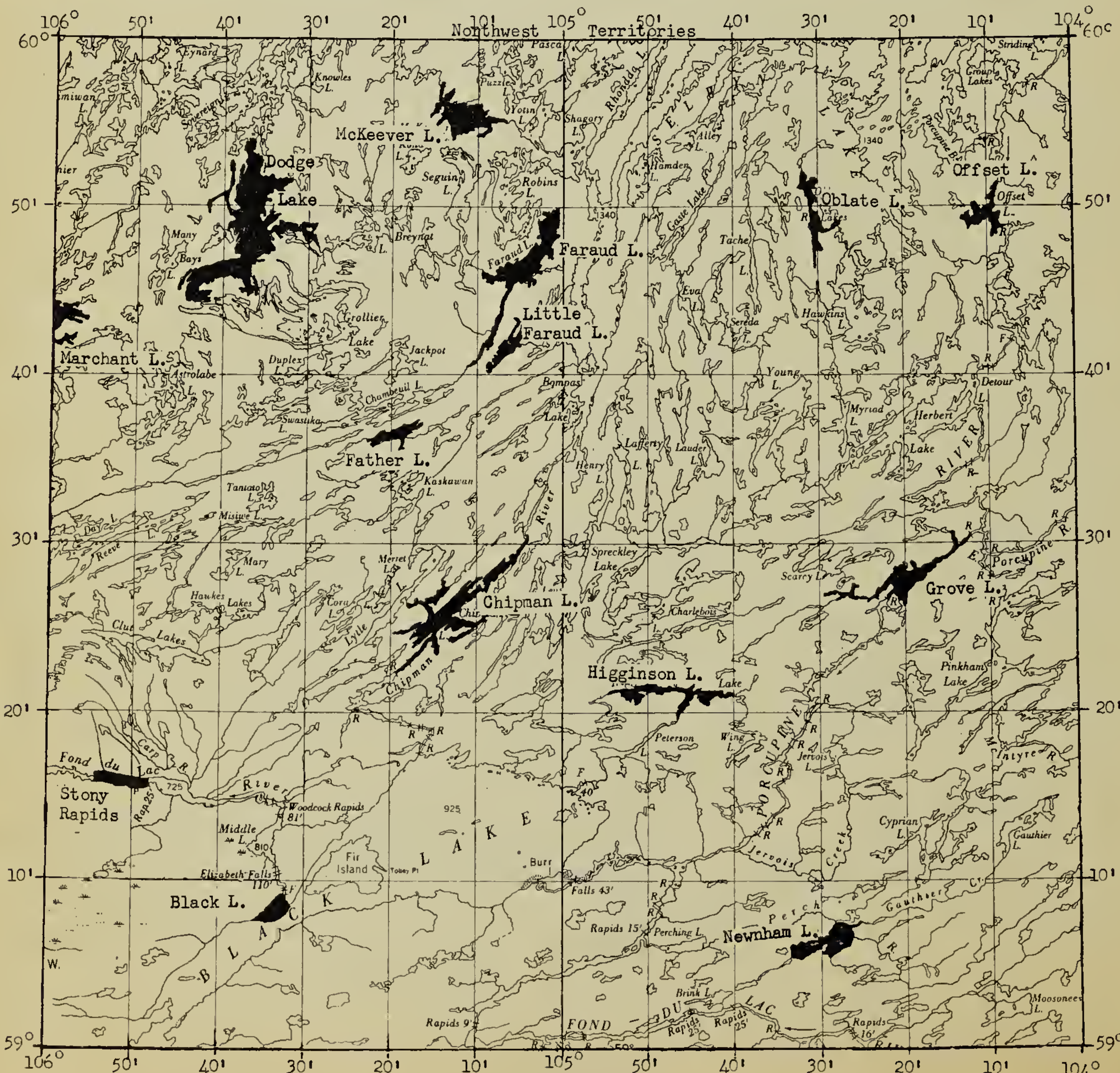
by **George W. Scotter,** Canadian Wildlife Service, Edmonton

The writer and L. E. Erickson were engaged in a study for the Canadian Wildlife Service of the effects of fire on the winter range of barren-ground caribou (*Rangifer arcticus arcticus*) in extreme north-central Saskatchewan from late May until September 15 of 1960. Since little is known of bird distribution in the northern portion of Saskatchewan, field notes were made on the birds encountered.

The study area was located in the Black Lake region, from 59° N. latitude to the Saskatchewan-Northwest Territories boundary and from 104° W. to 106° W. longitude. The localities in which observations were made are shown on the accompanying map.

On the basis of topography, geology, and vegetation, two major habitat divisions can be recognized. North of a line extending from the Fond du Lac River to east of Black Lake the region is covered with forests of black spruce (*Picea mariana*), except for fire-disturbed areas which support white birch (*Betula papyrifera*). jack pine (*Pinus banksiana*) predominates in the region south of this line. Rowe's (1959) description of the forest regions of Canada placed the jack pine forest in the Athabasca Southern Section, and the northern forest in the Northwest Transition. Plants within these areas have been reported by Scotter (1961).

The geology of the area was outlined by Furnival (1941a and 1941b). The northern section is characterized by Precambrian rocks which are considerably folded and faulted. Elon-



gated lakes and steep hills dominate the topography, while the southern section is flat-lying Athabasca series sandstone of a later Precambrian age.

The region is generally considered to be within the Hudsonian life zone. Dice (1943) included the region in the Hudsonian biotic province.

No previous observations of birds in this region of northern Saskatchewan are known to the writer. Unpublished records for the area west of this region include work by Francis Harper in 1914 and 1920, T. M. Shortt in 1945, and R. W. Nero in 1960. Preble (1908), based largely on notes received from R. MacFarlane, made occasional mention of bird distributions in northern Saskatchewan.

Since other duties precluded observations during certain periods, the annotated list of species which follows is not a complete list of the birds in the region. No search for nests was made, but several were found during the course of other field work and furnish some information on breeding ranges. The annotated list of observations is arranged in accordance with the A.O.U. Check-list (1957). The dates and places of the observations along with notes of interest are included. Relative abundance is signified by the terms "common," "fairly common," "scarce," "rare." All doubtful identifications were omitted from the list.

ANNOTATED LIST OF SPECIES

Common Loon *Gavia immer.*—Common. Grove L. June 21; Offset L. June 29; Oblate L. July 2; McKeever L. July 8; Faraud L. July 14; Stony Rapids July 28; Marchant L. July 31; Dodge L. August 7; Father L. August 9; Newnham L. August 17; Chipman L. August 30.

On July 2 on an island in Oblate Lake we found a nest with two eggs, the site consisting of nothing more than a slight depression in the soil. The nest was surrounded by a thick scrub cover on three sides and open to water on the fourth. As the nest was approached the bird slid into the water and began an interesting performance. By beating its wings vigorously, the loon reared high into the air until only the tail and feet remained submerged. Beating of the wings, accompanied by several sharp calls, caused no small amount of commotion. These antics were repeated three or four times before the bird disappeared. Several hours later the nest was still unoccupied.

Common Loon nest on an island in Oblate Lake, July 2, 1960.

Canada Goose *Branta canadensis.*—Scarce. Higginson L. June 8; Grove L. June 18; Offset L. June 25. Eleven geese were observed on Grove Lake. The birds appeared to be non-breeders and were likely sub-adults of the past year's hatch. Carex (*Carex deflexa*), bluejoint (*Calamagrostis canadensis*) and woodland horsetail (*Equisetum sylvaticum*) on a recently burnt area were used as food by these birds. Two goslings were observed at Offset Lake on June 25.

Mallard *Anas platyrhynchos.* — Fairly common. Higginson L. June 10; Grove L. June 21; Offset L. June 25; Newnham L. August 17. A brood of ducklings was present on a small pond adjacent to Grove Lake on June 21. Labrador tea (*Ledum groenlandicum*) sheltered a nest lined with dry grass and sedge containing 8 eggs, on an island in Offset Lake, observed June 25.

Pintail *Anas acuta.*—Scarce. Higginson L. June 11.

Green-winged Teal *Anas carolinensis.*—Scarce. Higginson L. June 11. Three birds were observed in a sheltered marshy bay on the south side of the lake.

Lesser Scaup *Aythya affinis.*—Scarce. Higginson L. June 11.

Common Goldeneye *Bucephala clangula.*—Scarce. Higginson L. June 11.

Bufflehead *Bucephala albeola.*—Scarce. Higginson L. June 11.

Surf Scoter *Melanitta perspicillata.*—Scarce. Higginson L. June 11; Faraud L. July 15; Newnham L. August 17.

Common Merganser *Mergus merganser.*—Fairly common. Higginson L. June 10; Grove L. June 25; Offset L. June 27; Oblate L. July 2; McKeever L. July 8; Father L. August 9; Newnham L. August 17.

Goshawk *Accipiter gentilis.* —Scarce. Stony Rapids September 10.

Red-tailed Hawk *Buteo jamaicensis*—Scarce. Oblate L. July 6; Faraud L. July 16; Newnham L. August 20.

Bald Eagle *Haliaeetus leucocephalus.*—Fairly common. Black L. June 5; Higginson L. June 8; Grove L. June 17; Oblate L. July 2; McKeever L. July 8; Newnham L. August 17.

A nesting site at Grove Lake was situated in the tallest jack pine tree within a quarter mile of the lake, and was occupied by two eaglets. Both parents were active in the care of the eaglets, but they offered no threats when the young were photographed at close range. Remains of northern pike (*Esox lucius*) were abundant in and around the nest and it appeared that this fish constituted a large portion of the eagles' diet. The presence of northern pike may also suggest that the eagles were catching this fish, which prefers shallow water, rather than picking up dead fish around the lake shore as generally reported. Lake trout (*Salvelinus namaycush*) which were numerous in the lake, prefer deeper water and likely were more difficult for the eagles to capture. If fish were picked up from the lake shore an almost equal abundance would be expected.

Osprey *Pandion haliaetus.*—Scarce. Stony Rapids July 28. This bird was observed flying along the Fond du Lac River.

Pigeon Hawk *Falco columbarius.*—Scarce. Offset L. June 29; Dodge L. August 7; Newnham L. August 25.

Sparrow Hawk *Falco sparverius.*—Scarce. Black L. June 5; Higginson L. June 8; Stony Rapids July 20.

Spruce Grouse *Canachites canadensis.*—Common. Higginson L. June 14; Grove L. June 21; Offset L. June 27 and June 30; Oblate L. July 2; McKeever L. July 8; Faraud L. July 14; Stony Rapids July 20; Marchant L. August 2; Dodge L. August 7; Father L. August 13; Newnham L. August 17; Chipman L. August 30.

On June 30 a nest with only 5 eggs (10-12 is a more common number) was found in a muskeg. A brood of about seven were seen (July 2) in a mature black spruce forest at Oblate Lake. Spruce Grouse were the most common bird of the region and mature black spruce forests were their favored habitat. Black flies and lichens appeared to be part of their summer diet.

Sharp-tailed Grouse *Pediocetes phasianellus.*—Rare. Marchant L. July 31. This observation was made in a recent burn approximately 32 miles northwest of Stony Rapids and appears to extend the known range of this bird in Saskatchewan.

Spotted Sandpiper *Actitis macularia.*—Scarce. Higginson L. June 14; Grove L. June 25; Stony Rapids July 20; Dodge L. August 7; Father L. August 9; Newnham L. August 17.

Solitary Sandpiper *Tringa solitaria.*—Scarce. Faraud L. July 14.

Lesser Yellowlegs *Totanus flavipes.*—Scarce. Higginson L. June 11; Offset L. June 30.

Bonaparte's Gull *Larus philadelphia.*—Common. Grove L. June 25; Offset L. June 27; Oblate L. July 2 and July 4; McKeever L. July 8 (nest with three eggs); Farud L. July 15; Stony Rapids July 20; Marchant L. July 31; Dodge L. August 7; Newnham L. August 17; Chipman L. August 30. Three young gulls were observed, July 4, on Oblate Lake, and

One of three young Bonaparte's Gulls found at Oblate Lake, July 4, 1960.

one was later photographed. The adult birds made vociferous threats and dived at us while the young were on the water, but threats were discontinued when the young reached a small island.

Common Tern *Sterna hirundo*—Fairly common, Grove L. June 18 and June 21; Oblate L. July 2; McKeever L. July 8; Faraud L. July 15; Stony Rapids July 20; Marchant L. July 31; Dodge L. August 7. Five nests, with 3 eggs in each, were located July 8, on an island scarcely more than 20 feet long and 12 feet wide. The nests were fully exposed and consisted of nothing more than dry plant stalks in a shallow depression.

Common Nighthawk *Chordeiles minor*—Fairly common, Higginson L. June 11; Grove L. June 18; Stony Rapids July 20; Marchant L. July 31; Dodge L. August 7; Newnham L. August 17.

Belted Kingfisher *Megaceryle alcyon*—Scarce, Grove L. June 25.

Yellow-shafted Flicker *Colaptes auratus*—Fairly common, Black L. June 3; Higginson L. June 8; Grove L. June 18; McKeever L. July 8; Faraud L. July 14; Newnham L. August 17.

Black-backed Three-toed Woodpecker *Picoides arctictus* — Scarce, Oblate L. July 4.

Barn Swallow *Hirundo rustica*—Rare, Stony Rapids July 20. Barn swallows were nesting above the door of the storage shed owned by the Department of Natural Resources. Only one pair of birds was observed in this region.

Gray Jay *Perisoreus canadensis.*—Common, Higginson L. June 8; Grove L. June 18; Offset L. June 30; Oblate L. July 2; McKeever L. July 8; Faraud L. July 16; Marchant L. August 2; Dodge L. August 7; Father L. August 9; Newnham L. August 17. The Gray Jay was a common visitor at our campsites.

Common Raven *Corvus corax.*—Fairly common. Stony Rapids June 2; Higginson L. June 8; Grove L. June 18; Offset L. June 25; Oblate L. July 2; McKeever L. July 8; Marchant L. August 2; Dodge L. August 7; Father L. August 9; Newnham L. August 17; Chipman L. August 30. Old nesting sites were common on rocky ledges at McKeever Lake.

Black-capped Chickadee *Parus atricapillus.*—Scarce, Faraud L. July 14; Stony Rapids July 20.

Boreal Chickadee *Parus hudsonicus*—Fairly common, Marchant L. August 2; Newnham L. August 17; Chipman L. August 30.

Robin *Turdus migratorius.*—Fairly common, Stony Rapids June 2; Higginson L. June 8; Grove L. June 18; Offset L. June 25; Oblate L. July 2; McKeever L. July 8; Faraud L. July 16; Marchant L. August 2; Dodge L. August 7.

Hermit Thrush *Hylocichla guttata.*—Fairly common, Higginson L. June 8; Grove L. June 17; Offset L. June 25; Oblate L. July 4; Faraud L. July 14; Marchant L. August 2.

Ruby-crowned Kinglet *Regulus calendula.*—Rare, Stony Rapids July 20.

Yellow Warbler *Dendroica petechia*—Scarce, Stony Rapids June 2; Newnham L. August 25.

Myrtle Warbler *Dendroica coronata.* Common, Black L. June 3, nest with three eggs; Higgins L. June 8; Grove L. June 20; McKeever L. July 8; Stony Rapids July 20; Marchant L. August

2; Father L. August 9; Newnham L. August 17; Chipman L. August 30.

Northern Waterthrush *Seiurus barocensis.*—Scarce, Father L. August 14; Newnham L. August 17.

Rusty Blackbird *Euphagus carolinus.*—Scarce, Newnham L. August 25.

White-winged Crossbill *Loxia leucoptera.*—Scarce, Oblate L. July 5; Faraud L. July 14.

Slate-colored Junco *Junco hyemalis*—Common, Black L. June 3; Higginson L. June 8; Grove L. June 22; Offset L. June 30; Oblate L. July 4; McKeever L. July 8; Faraud L. July 14; Stony Rapids July 20; Dodge L. August 7; Newnham L. August 17; Chipman L. August 30. The nest found June 3 at Black Lake rested on the ground in the shelter of Labrador tea and contained 3 eggs, while the nest at Oblate Lake, July 4, inside a muskeg hummock, contained 5 eggs.

Chipping Sparrow *Spizella passerina.*—Scarce, Stony Rapids June 1.

White-crowned Sparrow *Zonotrichia leucophrys.*—Scarce, Stony Rapids June 2; Higginson L. June 11; Grove L. June 18; Offset L. June 25; Oblate L. July 2; McKeever L. July 8; Faraud L. July 15; Marchant L. July 31; Dodge L. August 7.

Song Sparrow *Melospiza melodia.*—Scarce, Stony Rapids June 1; Grove L. June 25.

LITERATURE CITED

American Ornithologists' Union 1957. Check-list of North American birds. 691 pp.

Dice, L. R. 1943. The biotic provinces of North America. Ann Arbor, University of Michigan Press. 78 pp.

Furnival, G. M. 1941a. Porcupine River, Northern Saskatchewan, Geol. Surv. Canada Map 658A.

Furnival, G. M. 1941b. Stony Rapids, Northern Saskatchewan, Geol. Surv. Canada. Map 659A.

Preble, E. A. A biological investigation of the Athabasca-Mackenzie region. U.S. Dept. of Agriculture, Bur. Biol. Surv. N. Amer. Fauna No. 27. 574 pp.

Rowe, J. S. 1959. Forest regions of Canada. Dept. of Northern Affairs and National Resources, Forestry Branch Bull. 123. 71 pp.

Scotter, G. W. 1961. Botanical collections in the Black Lake region of Northern Saskatchewan (1960). *Blue Jay,* 19:28-33.

BALD EAGLE CENSUS

Alarmed by persistent reports of a downward trend in the population of the Bald Eagle the National and Canadian Audubon Societies have announced a continental study aimed at determining the status of the species. The project will cover at least five years.

The first step will be an inventory. Once numbers have been estimated and reproductive success measured future checks will disclose population trends. The eagle program is under the direction of Alexander Sprunt IV.

Your assistance is earnestly solicited. If you have any information please write: Canadian Audubon Society, 423 Sherbourne Street, Toronto 5.

COLOURED SNOWY OWLS

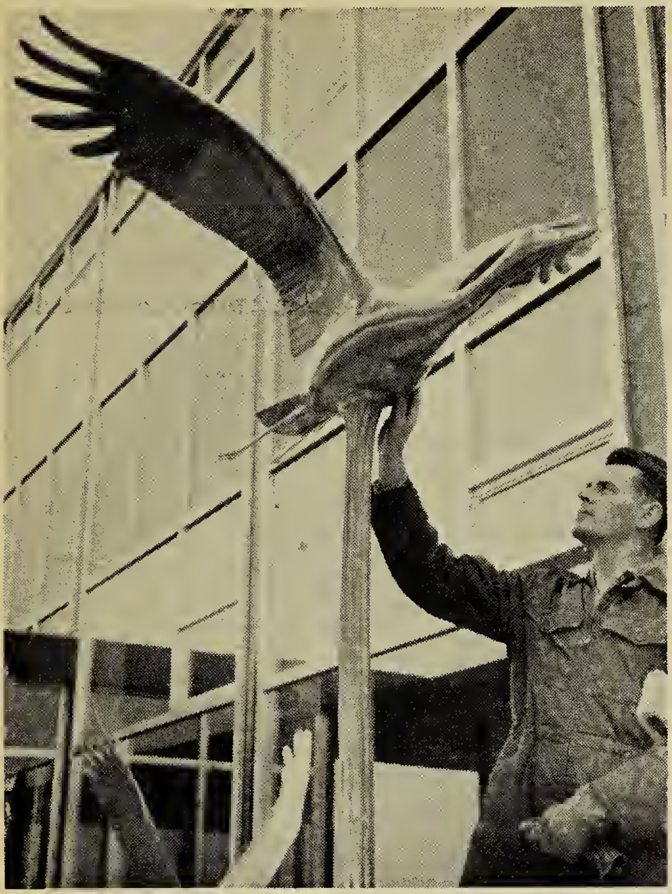
A number of Snowy Owls were marked this spring in Wisconsin by spray painting or dyeing a portion of the plumage with a variety of colours. Anyone who sighted one of these owls moving north is asked to report date, location, and colour marking (note the colour and the part of the body coloured, e.g. right or left wing, preferably sketching the bird), to "Operation Snowy Owl", Plainfield, Wisconsin.

THE BLUE JAY BOOK SHOP OFFERS

Prairie Wildflowers, L. T. Carmichael	$3.10
Field Guide to the Western Birds (rev. ed.) R. T. Peterson	$5.95
Birds of the Saskatchewan River, Houston and Street	$1.50
Guide to Sask. Mammals, H. Beck	.50
Pocket Guide to Birds Allan Cruickshank	.60
Sask. emblem hasti-notes (lily, sharp-tail)	$1.00
Slides of museum habitat cases, each	.25
Coloured cards of habitat cases, set of seven	$1.25 and $1.35

Whooping Crane Monument

by **Dave Green,** Department of Natural Resources, Regina



Sask. Photo Services

Sculptor W. Niessen and the Whooping Crane monument at the Regina City Airport.

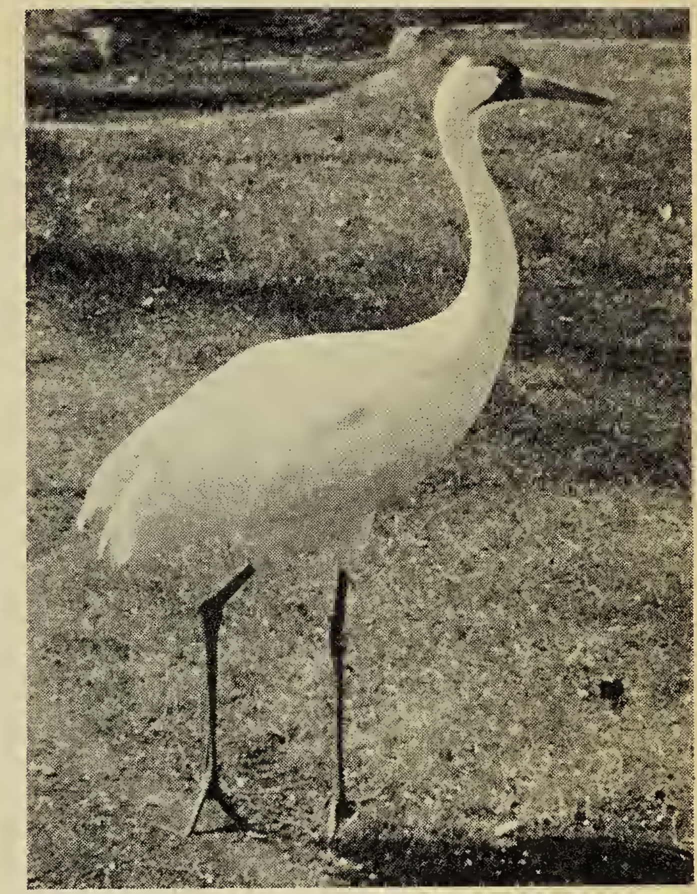


Photo by F. G. Bard

Captive Whooping Crane at the San Antonio Zoo, March, 1960.

Although the annual migration of the only wild Whooping Cranes (*Grus americana*) in North America carries the magnificent white birds over Saskatchewan twice yearly, few residents can expect a glimpse of them. Whooping Cranes are among the rarest of the world's living things: only 36 of these birds were counted last season on their southern wintering grounds. Canada's Department of Transport has recently honoured the species with a handsome monument at Regina's City Airport.

Two life-sized sculptured figures of the birds were created for the monument by Regina artist Wolfram Niessen, 38-year-old sculptor-naturalist employed by the Saskatchewan Museum of Natural History. The monument consists of one bird in the act of taking off and a second in full flight.

The design for the monument was conceived by Mrs. Betty Gillespie, a professional interior decorator in Regina. Mrs. Gillespie visualized the statues as symbolizing the crossing point of one of the world's great bird migration routes and the east-west flight routes of Canada's commercial airlines. The Whooping Cranes, she felt, admirably represent all the birds that use the north-south flyway.

Almost a year was spent in preparing the monument. Mr. Niessen first modelled the cranes in plaster of paris over a steel frame. The plaster figures were then transferred into wax, retouched by the artist and cast in aluminum by the St. Mark's Shop foundry at Lumsden. The foundry operator, John Nugent, is himself a sculptor and was well able to appreciate the difficulties of this undertaking. The task fulfilled the highest expectations of those concerned.

Now on display at the sculpture court at the airport, the cranes are an impressive addition to the world's bird monuments, including Salt Lake City's commemoration of the gulls that saved the early Mormon settlers from a plague of insects and the famous Passenger Pigeon memorial in Wisconsin.

Recent Records of the Greater Prairie Chicken in Saskatchewan

by **Margaret Belcher,** Regina

Photo by K. Hodges

Greater Prairie Chicken

The Greater Prairie Chicken or Pinnated Grouse (*Tympanuchus cupido*) was not an original inhabitant of the Canadian "prairies," as was its near relative the Sharp-tailed Grouse. It appears to have come to Canada rather recently, arriving about the turn of the century. Settlers in Manitoba first reported its appearance in the late 1880's and referred to it as the "Minnesota Chicken." The Greater Prairie Chicken followed the advance of the farming westward and at one time was fairly common in open grassy areas in Saskatchewan. Then, because of more intensive cultivation and other undetermined factors, the numbers of Greater Prairie Chicken decreased markedly, so that today it is difficult to establish its occurrence in Saskatchewan.

The vital role of grassland in Prairie Chicken ecology is shown in a table included in **A Guide to Prairie Chicken management** by F. N. Hamerstrom, Jr., Oswald E. Mattson and Frances Hamerstrom (1957). In this table the total grassland area is related to the abundance of Prairie Chicken, with a historical review, and letters from Houston and Bard are quoted (p. 111) presenting the Saskatchewan picture as outlined above. A map in the U.S. Fish and Wildlife circular **Distribution of American gallinaceous game birds** by John W. Aldrich and Allen J. Duvall (1955), which shows the present distribution of the Greater Prairie Chicken in relation to its past distribution, indicates records for areas in North Dakota and Manitoba that touch the extreme south-east corner of Saskatchewan. This would suggest the possibility of Prairie Chicken still being present in the southeast corner of the province.

A summary of the Saskatchewan Museum of Natural History's records of the Greater Prairie Chicken in Saskatchewan was given by F. G. Bard to the Fifth Prairie Wildlife Habitat meeting in Regina, March 16-17, 1961. Apart from a few SMNH specimens for which no data is available, the records can be summarized as follows: one bird collected at Holdfast (H. Eutenner) and one at Nokomis (R. A. McEwen) no dates; one collected September 23, 1913, at Edam (W.E. Lake); sight records of numerous birds seen by H. H. Mitchell on September 30, 1913, three miles west of Regina, on February 15, 1916, at Craven, and on October 24, 1922, at Imperial Beach; Mitchell also took two specimens at Imperial Beach, October 27, 1922, and October 21, 1924; recorded at Dafoe as quite common and evidently breeding in 1928 and again April 24 and 28, 1929, by F. G. Bard, one specimen being collected April 25, 1929; five chicks were collected June 18, 1929, by F. Bradshaw at Quill Lake; several birds were seen at Dafoe on October 10, 1930 (F. Bradshaw) and October 11, 1930 (F. G. Bard); specimen taken April 30, 1931, by F. G. Bard at Imperial Beach; female taken at Viewfield by Dr. J. R. Hoag in October, 1931 (?); hybrid bird taken October 22, 1933, by J. C. Lusted at Truax; four seen at the north end of Last Mountain Lake June 5, 1936, by F. G. Bard; one specimen taken by F. G. Bard, October 24, 1940, east of Simpson; one seen in 1942 in February or March by F. W. Lahrman at Mortlach; specimen taken October, 1943, by F. N. Dunk at Marienthal; specimen taken October 31, 1945, by R. J. Fyfe at Carlyle (see **Blue Jay** 15:57).

In the **Birds of the Saskatchewan River** (1959) Mr. G. Street records scattered reports for the Nipawin area, including a female that he himself flushed with seven young on July 18, 1947, near Maywood, and a final record of a lone bird seen near Snowden, June 10, 1950, by Mr. and Mrs. Walter Matthews, Billy and Anne Matthews and James McCunn. In conclusion, Street comments that "these grouse are now believed to have disappeared from this area, if not from all Saskatchewan."

Street's comment, based on the dearth of records in the early 1950's, reflected a rather general feeing that the Greater Prairie Chicken had perhaps become extinct in the province. Sight records of recent date, however, have revived our hope that a few birds still exist. One was reported seen near Old Wives' Lake by Roger Tory Peterson and James Fisher on August 25, 1959 (**Blue Jay,** 18:13), and in a letter from John M. Pringle (**Blue Jay,** 19:55) two birds believed to be Greater Prairie Chicken were reported at Stoughton. The mention of the pair at Stoughton brings a comment from one of the **Blue Jay** readers, Geoffrey Hewson of Langbank, who has not seen the Prairie Chicken in his area since around 1924 when he recalls them booming on the knolls. On the other hand, R. Folker, biologist with the Sask. Department of Natural Resources, reports an observation from David MacDonald of Manor who saw a single Prairie Chicken in the spring of 1954, three birds in 1958 (one or two of which may have been shot by hunters), and a single bird again in the spring of 1959 observed on a Sharp-tailed Grouse dancing ground. Finally, a report comes from Fred Sharp working with Ducks Unlimited in Alberta of three birds that were seen on the fourth day of the upland game season of 1959 approximately four miles north of Sidewood, Saskatchewan. The three Greater Prairie Chicken were with some eight or ten Sharp-tailed Grouse and flew north into the sand hills when Mr. Sharp's companion got out of the car.

First Cardinal Specimen for Saskatchewan

by **Elmer Fox, Regina**

On December 29, 1960, a male Cardinal (*Richmondena cardinalis*) was collected at Craven, Saskatchewan, 20 miles northwest of Regina, thus adding another species to the official list of birds known to have occurred in Saskatchewan. The bird was collected by R. W. Nero and myself during a Saskatchewan Museum of Natural History expedition to Craven where the Cardinal had first been reported on November 23 by Mrs. Frank Luckey in whose yard it was regularly feeding. During the past 35 years, the Cardinal has on occasion been reported by competent observers; but until this date no specimen or acceptable photograph had been taken, and the Cardinal thus remained on the hypothetical list.

The earliest known record for western Canada is the observation of a Cardinal in Regina in the summer of 1926 by F. G. Bard. A few other records have been recorded since that time in the **Blue Jay.** A male Cardinal was seen feeding on table scraps at a feeding station in Esterhazy in January, 1951, by Mrs. Bert Ford of Hazelcliffe (**Blue Jay,** 5:3:2); a single bird was observed on the May Day count, May 26, 1957, by five members of the Saskatoon Natural History Society, led by Frank Roy (**Blue Jay,** 15:102); and Mrs. Ted Scrivens saw a Cardinal at her farm home on July 9, 1957. In addition to these Saskatchewan records the **Blue Jay** has a Manitoba observation—W. F. Rosenbarker of Kelwood first saw a Cardinal in the summer of 1958. This bird was seen occasionally throughout the summer and on the date of writing, December 30, 1958, the bird was being seen every day at the feeding station (**Blue Jay,** 17:17).

The Cardinal is a non-migratory bird, and is resident wherever found. It is generally distributed in the United States, east of the Great Plains and north to southern Ontario along the Canadian border. In later years it seems to have gradually extended its range westward. Taverner in his **Birds of Canada** (1934) indicated the western range as Manitoba, with one recorded observation.

In studying the range of the Cardinal in western Canada, I am greatly indebted to Angus Shortt of Winnipeg who reviewed the Manitoba records for me in order to give the history and present status of the Cardinal in Manitoba.

According to Mr. Shortt (pers. corres., February 22, 1961), the first recorded observation from Manitoba was in the fall of 1932 when Mrs. S. J. Jones of Middlegate, Winnipeg, observed one in her garden. In October of the same year, a pet Cardinal escaped from its cage in nearby Fort Rouge, and many observers assumed this bird to be the one recorded in Middlegate. The Cardinal was observed in the same Middlegate garden in February, 1933. In 1934, Angus Shortt, who lives at Deer Lodge, St. James, a suburb of Winnipeg, was host to a Cardinal at his feeding station from the 14th to the 17th of December, and saw the bird again on December 22. The next report of the Cardinal was in February, 1937, when B. W. Cartwright in his **Winnipeg Tribune** column "Wild Wings" reported an observation at a feeding station in Gladstone, Manitoba.

The first recorded information on the Cardinal nesting in Manitoba was reported by A. G. Lawrence in his **Winnipeg Free Press** column "Chickadee Notes." The nest was found by Mr. and Mrs. E. J. Humphries of Winnipeg on August 16, 1942. It contained two young and an egg that proved to be infertile. On August 23, the nest was destroyed, and the fate of the young was not learned.

In 1943 a pair of Cardinals again nested in the same area. I quote from Mr. Shortt's notes: "A pair of Cardinals returned to their old haunts along the banks of the Assiniboia River near the Humphries' home. They were first seen on July 1. They made two nesting attempts; both nests were found by Mrs. Humphries, the first was a failure and was found pulled down with one broken egg on the ground below. On July 18, the second nest was located, further down the river from the site of the first, eight feet up in a slender plum tree draped with bittersweet. Nest placed on twigs in a bower of leaves contained three eggs on July 21, two young on July 28. These were well grown on August 2. On August 5, the nest was empty. Adults were heard in the vicinity until August 8, but no sign of the young."

A. G. Lawrence in "Chickadee Notes" reports that one or more birds wintered in the Winnipeg area from 1941 to 1945. He also reported that Mr Ed Robinson of Wawanesa, Manitoba, saw one on November 8, 1946.

More recent records of the Cardinal could indicate that the birds are increasing in number in Manitoba. In 1957, a male appeared at the feeding station of Mr. C. R. Calder, St. Vital, in Winnipeg, and was almost a daily visitor throughout the winter. It was last seen in early April. It was seen by a number of Winnipeg ornithologists and was photographed in colour, stills, and movies. In 1959-60, a male Cardinal was a regular visitor at the feeding station of Mrs. C. F. Snarr, Morris, Manitoba. It was last seen on March 19, 1960. Coloured slides of this bird were taken by Mr. B. Stevenson, of Morris. The **Winnipeg Free Press** column, "Chickadee Notes," now written by H. Mossop, reports an observation by Stewart Criddle at Treesbank, Manitoba, in 1960. Mrs. W. Rickets (Mr. Shortt's sister-in-law), reports an adult male at her feeding station on July 5, 1958. From September 27 to 29 of the same year, a bird visited the feeding station. Again in 1960 Mrs. Rickets reported a bird feeding in mid-November. The 1960 Winnipeg Christmas bird count reports two birds, one from Deer Lodge, one from Douglas Park Road. Both of these locations are in St. James so one bird could have been reported twice. At the time Mr. Shortt wrote to me (February 22, 1961), an adult male was reported at a window feeding tray of Mrs. J. F. Blanchard, Selkirk, Manitoba. The bird had been a regular visitor for several weeks.

The increasing frequency of these observations makes us ask whether the Cardinal is gradually extending its western range. Certainly we have had more reports in recent years, but this could result from the increase in the number of bird watchers, and the fact that there are more outlets for reporting their observations. It will certainly be interesting to see what happens in 1961. If you see a Cardinal make careful notes of your observations and send them to the Editor of the **Blue Jay**. As chairman of the Prairie Nest Records Scheme, I should appreciate having anyone fortunate enough to locate a nest in Saskatchewan writing or phoning me at 3455 Rae Street, Regina.

Clark's Nutcracker, Unusual Visitor to Saskatchewan

by **Robert V. Folker**, Saskatoon

On August 18, 1960, when I was hiking in the "hills" northwest of Ravenscrag, on the ranch of Billy Topham, I made what I considered a rather unusual bird observation. The bird was a Clark's Nutcracker (*Nucifraga columbiana*). This species of the crow family is common in the Rocky Mountains, and I first became acquainted with it while skiing in the mountains north of Boise, Idaho. While I saw it only briefly, the striking pattern of its black and white wings and tail against the uniform gray body colour made it immediately recognizable. To my knowledge, there are only two other records for Saskatchewan, and both are from this immediate vicinity. In 1919 Spencer Pearse observed several on his ranch and collected a specimen on September 19. Six years later Pearse saw another, again in September (Godfrey, W. E. 1950. Birds of the Cypress Hills and Flotten Lake Regions, Sask. Nat'l Mus. Canada, Bull. No. 120).

This bird was seen in a unique bit of eroded benchland, located at the right elevation and with the necessary moisture to grow fair stands of spruce. The main valley is drained by Conglomerate Creek, otherwise known as the Little Frenchman River; this stream joins the Frenchman River at Ravenscrag. Numerous side-drainages exist, most of them well wooded and with small, spring-fed streams flowing through them. The country offers impressive contrasts with semi-arid, sparsely-covered slopes merging with those that are overgrown with trees and shrubs.

Bird-life in this area appears to be as varied and interesting as the topography and the flora. On this particular trip I also noted a family of Rock Wrens flitting about over a pile of windcarved sandstone, daring to approach within thirty feet of me. A Turkey Vulture, catching the updrafts from bare, white hillsides, soared overhead. Mr. Topham reported he had observed four of these scavengers through the summer, and believed they were nesting somewhere in the area. At the mouth of one large draw, a group of Red-breasted Nuthatches were feeding among the spruce, joined at intervals by a flock of wheeling Pine Siskins. Further up this same draw, I came across a family of curious but shy Ovenbirds. It is quite probable that this is a valid nesting record for this species. Chickadees were observed several times as were White-crowned Sparrows. A solitary Oregon Junco looked me over as I sat watching the Ovenbirds.

One can always look forward to seeing the unexpected in this intriguing valley and certainly this trip was no exception.

ATTENTION!
NEW PETERSON BIRD FIELD GUIDE

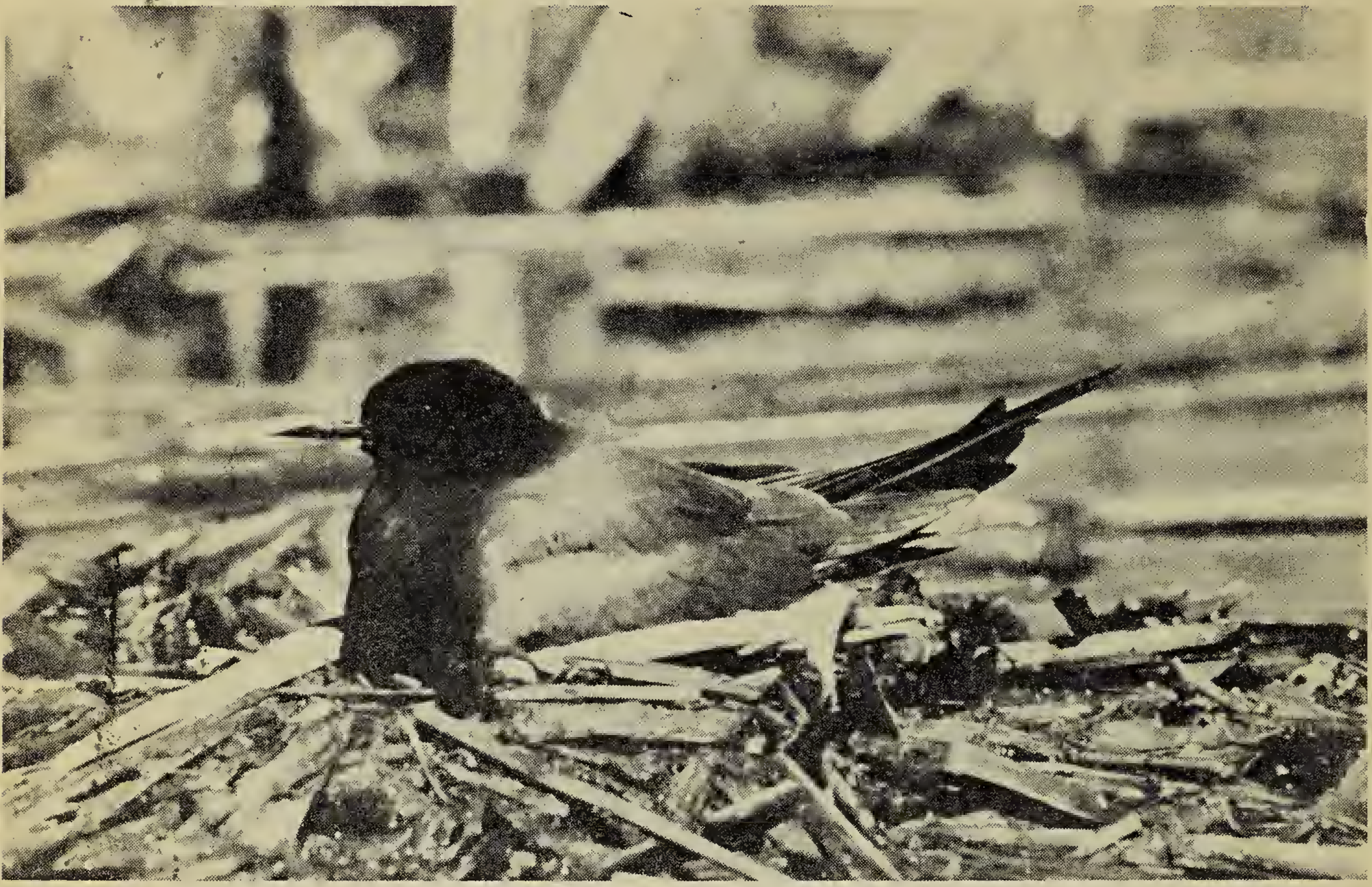
Roger Tory Peterson's new revised **Field Guide to the Western Birds** (1961) is now available. The new guide really answers the need of Saskatchewan birders because it extends the range to cover the whole of the province (in fact, as far east as the 100th meridian). Formerly we had to use the western guide to supplement the eastern guide; in the revised western guide, all our species are listed in the one book.

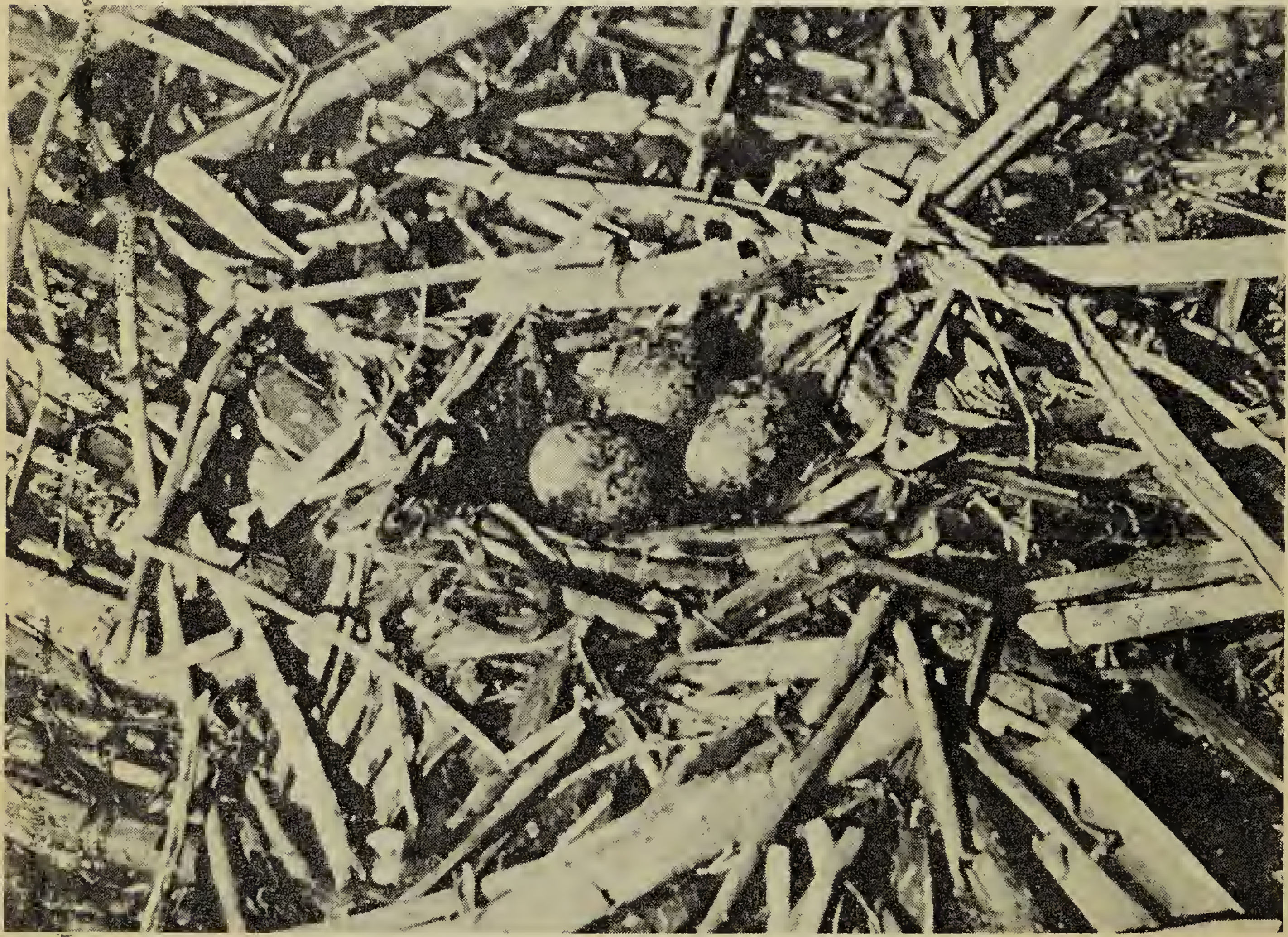
In addition, all illustrations are **new**, and almost all are in colour.

Support the S.N.H.S. by buying your copy of the revised **Field Guide to the Western Birds** from the **Blue Jay** Bookshop, Saskatchewan Natural History Society, Sask. Museum of Natural History, Regina.

Black Tern Nesting at "Brown's Slough"

by **Doug Gilroy**, Regina





In the summer of 1960 a colony of Black Terns nested at "Brown's Slough," two miles west of Condie, where I took the above photographs on June 19. Male and female took turns incubating the eggs at approximately 15-minute intervals.

Sun-bathing in Birds

by **Doris C. Hauser,** Fayetteville, North Carolina

Liz Roley's "Nature Notes" column in the **Leader-Post** of January 28, 1961, interested me with its description of a Black-billed Magpie (*Pica pica*) sunbathing. In the middle of the Qu'Appelle Valley, Liz Roley (Mrs. Elizabeth Cruickshank) observed a magpie fly "purposefully across the valley" to a sheltered ledge on an earth embankment facing south into the sun. The ritual performed by the bird as he took his dust or sand bath was described as follows: "He arched his back feathers until they were perpendicular spears. He made sidewise somersaults. He curved his body, his feathers pointing in all directions making him look like a spiked ogre. A series of acrobatics which followed made us hold our breath—we were sure he would fall to the ground below. For a while he remained perfectly still, his breast pressed into the sand, his beak wide open. Then abruptly, as though he had forgotten a part of the rite, he began to thoroughly dust his wings and tail. At last, he seemed satisfied to rest, comfortable and at peace. Finally, as the sun left his niche, he flew in bounding flight across the field to the dead trees along the river, calling as he went."

The careful reporting of Mrs. Cruickshank points up three characteristics of a typical incident of voluntary sun-bathing: it is premeditated and purposeful; it requires sun and protection from breezes sufficient to trap the heat; and it is apparently a therapeutic measure, affording a sense of well-being to the bird.

Sun-bathing is a form of bird behaviour which has received little attention in print until very recent years. Observation and study now indicate that it is one of several forms of pseudo bathing which are closely allied. Many of the postures and physical activities employed in the water bath are duplicated and exaggerated in sun-bathing and dust-bathing, smoke-bathing, heat-bathing and "anting." In addition, there are other postures and activities which are peculiar to these forms.

In pseudo bathing, it appears to be the presence of heat which acts as the trigger and brings forth the "acrobatics" and assumption of postures both singular and unexpected in a bird. Any single incident may be a combination of one or more forms.

Although birds may be capable of discerning the therapeutic value of sunshine and heat, it is more possible that they indulge in the pseudo bathing activities because there is an element of pleasure involved. Observers have often mentioned the quality of "ecstasy" expressed by an "anting" bird. A sun-bathing bird, outstretched on a patch of hot sand appears to be in a coma but apparently enjoys it because it repeats the sunbath, with intermittent interruptions for preening sessions, over and over again.

On many occasions, a Taylor candy thermometer has registered 140°F. at a site where dozens of birds, of different species, were gathered to sun-bathe. A favoured sun-bathing site may be used repeatedly for years and though some birds may sun-bathe in solitude, it as often becomes a community affair.

One's first sight of a sun-bathing bird gives an immediate impression that the bird is suffering and dying. All its body feathers are raised high, the wings outstretched and tail fanned, and the head tilted to one side, with the bill wide open.

The bird may be ignorant of the beneficial results of the sun's irradiation but the postures it assumes in sun-bathing positions make certain that the feathers, which form a barrier to the body's absorption of vitamin D, are raised and parted, and the skin exposed. The birds change their positions in relation to the sun so that as much as possible of the body surface is exposed to its rays. Some species of birds roll over on one side, fanning out a wing so that its underside is uppermost; some throw themselves onto their backs exposing the entire ventral surface to the sun.

It seems possible that a by-product of sun-bathing, in some species, may be the accelerated manufacture and release of the fine oil of the preen gland which is used for dressing the feathers. Careful attention to the plumage, with frequent recourse to the preen gland, has been observed to be an integral part of the sun-bath of many birds. Studies have also indicated, though not conclusively, that birds may gain some benefit at each preening from the involuntary ingestion, by swallowing, of oil, applied to the feathers during an earlier preening session, which may have absorbed some Vitamin D from the sun. It has also been suggested that exposure to the sun may assist the bird in ridding its plumage of ectoparasites.

Midwinter sun-bathing records are far less common in my files than those of the more temperate months of the year and I have no other observations recorded in the presence of snow, or at an air temperature as low as 39°F. (Elizabeth Cruickshank, pers. corresp.) It is often the unusual incident which gives new clues to an understanding of behaviour, just as an expanding file of more commonplace records help to show a pattern which, in its own way, is important.

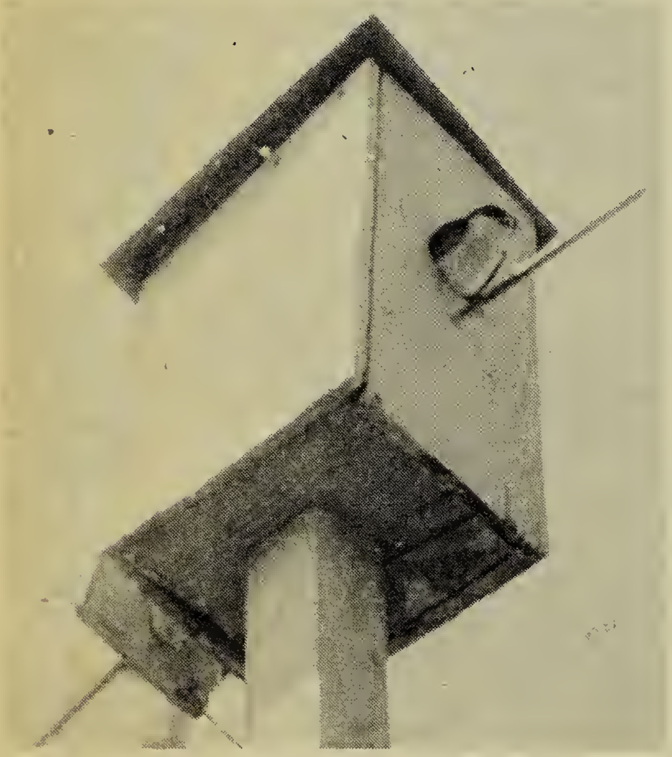
New species added to the list of sun-bathers, new locations and new postures, may all be important and helpful in defining the significance of sun-bathing in the life of the bird.

EDITOR'S NOTE: Doris C. Hauser (Mrs. Roscoe Hauser, Jr.) is an amateur ornithologist whose recent study on sun-bathing in birds (1957. *Wilson Bulletin* 69:78-90) has attracted considerable attention. Sun-bathing is a habit of birds which has been observed by nearly all who have an interest in watching birds, but there has been no previous extensive study of the subject. Still, the main basis of her research has been direct observations of birds in the field, an opportunity which is available to all of us. Her closing comments are appropriate: "The sun plays a vital part in the life-cycle of birds as it does for every living thing. It is hoped that this paper will draw attention to the subject and that observation and study of the effect of the sun on birds will follow."

Observations of Nesting Tree Swallows

THEY WILL NEVER COME

by **Richard W. Fyfe**, Great Whale River, Quebec



Our Tree Swallows' unpretentious home.

Approaching the nest box through a maze of power cables.

My title is quoted almost directly from the comment made by one of Saskatchewan's bird experts in reference to the situation I had chosen as a nesting site for Tree Swallows at my home in Regina. Of course, I naively asked "Why?" whereupon I received a most excellent answer which made me wonder why I had ever dreamt of setting up a nesting box in such a location.

I had realized that I was a long distance from water. I had also seen that the birds would have to twist through a maze of power cables even to approach the site, and that they

"A bird in the hand . . . "

would be nesting along a busy thoroughfare dangerously near the clothes line and almost among the branches of a nearby tree. Yet, like so many people, I simply wanted wild birds in and about my noisy cluttered city yard and I was daring to hope that they would come.

At first the predictions of my friend seemed justified; my nest box attracted only the none-too-particular House Sparrows, which I went out at six o'clock on many a morning to trap in order to discourage them from returning. Then on June 6, when most swallows were half-way through their nesting season, the first pair of Tree Swallows arrived, and almost immediately set up housekeeping. This they have done annually for the past three years, and as the photos indicate, they have almost accepted us as members of the family.

Obviously the moral of the story is the old one—where there is a will there is a way! The important thing is the will and the patience to execute it. The most difficult for me was to stop thinking about nest boxes and get them up. Nest boxes should be well ventilated and easily cleaned, and protected from predators such as cats. If you have sparrow trouble, a good idea is to provide a trap door which can be closed behind the unwelcome guests either to keep them out or to remove them from within. A few trappings will generally deter even the most persistent individuals.

TREE SWALLOWS VERSUS HOUSE SPARROWS

by **David Hatch**, Oak Lake

During the spring and summer of 1960, I witnessed a struggle between several House Sparrows and Tree Swallows to claim the four nesting boxes around our farm home. House Sparrows, being very plentiful at Oak Lake, are very hard to keep under control. During the first part of the Tree Swallow nesting season, I had to clean each nesting box daily to remove the nest material deposited during the day by House Sparrows.

On one such visit to clean the nesting boxes on May 10, 1960, I was surprised to see upon removing the lid that inside was a live House Sparrow and a dead Tree Swallow. Both were females. The Tree Swallow which could not have been dead more than 30 minutes as it was still quite warm, had been severely picked around both eyes and its beak, the complete area being stained with blood. This swallow, wearing band number 26-84939, had been banded at Oak Lake on July 6, 1959, as a nesting adult female, and had returned safely from its wintering grounds only to be killed by a House Sparrow.

I examined eight Tree Swallow nests in 1960 of which four were presumably destroyed by House Sparrows. The fact that no House Wrens were ever seen at the nesting boxes frees wrens of any responsibility, but in all four nests each egg was punctured or slightly crushed. It didn't appear to matter how far advanced incubation was as the House Sparrows broke the eggs any time from the commencement of egg laying until seven days after incubation started.

At 2.00 p.m. on June 28, one particular nest contained three eggs and the adult Tree Swallows were in complete command of the nest. Twenty-four hours later all three eggs were broken and I caught a female House Sparrow within the

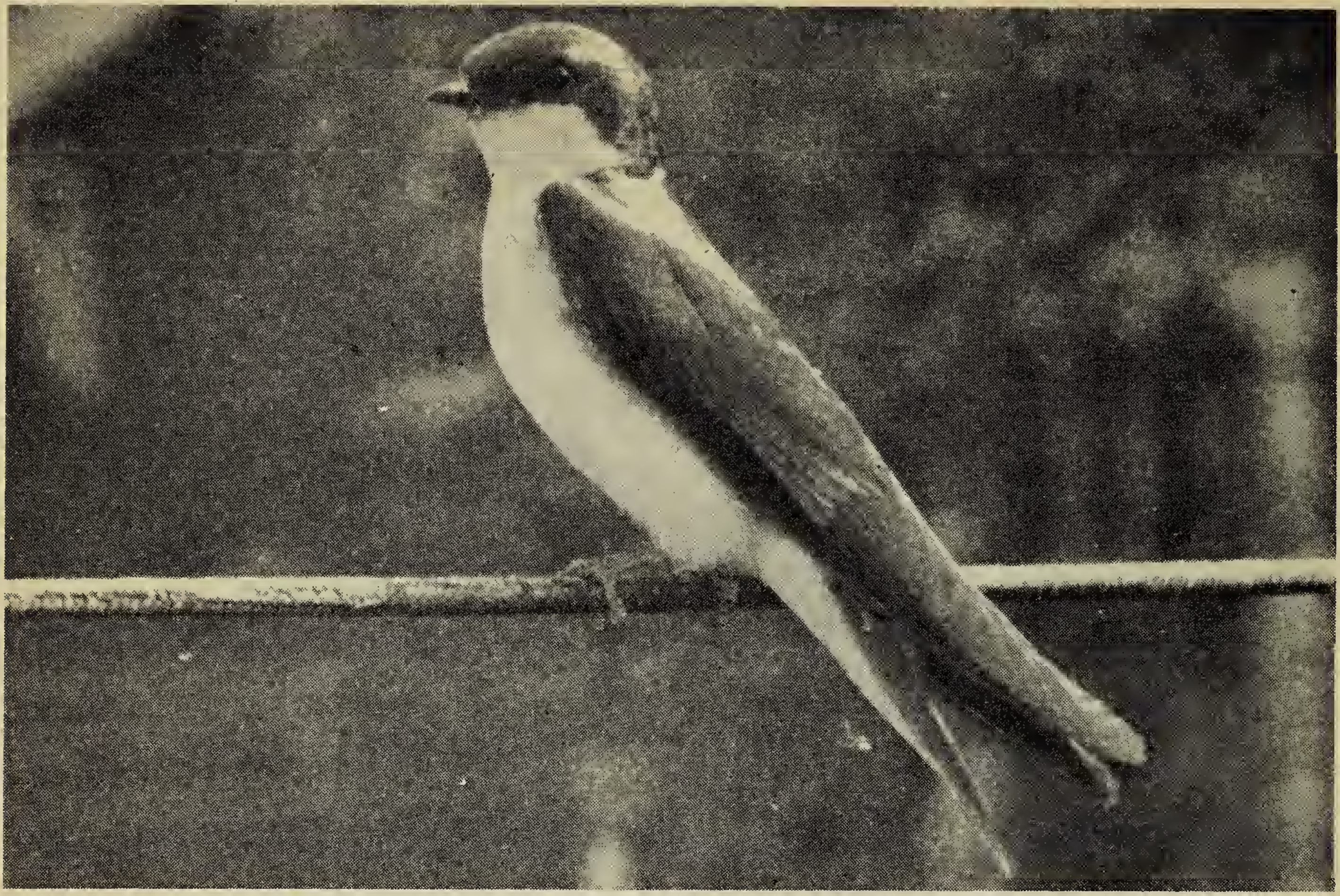


Photo by R. W. Fyfe

nesting box which already contained a great deal of House Sparrow nesting material. The Tree Swallows immediately left this area.

Another nest, containing seven Tree Swallow eggs, was visited on June 6. Revisiting this nest on June 10, I caught a female House Sparrow in possession and to my surprise the Tree Swallow eggs were replaced by two House Sparrow eggs.

The fact that half of the eight Tree Swallow nests of which I kept records in 1960 were destroyed by House Sparrows shows how destructive the House Sparrow is.

Bank Swallows Nesting in Gravel Stockpiles

R. W. Nero's note about Bank Swallows nesting in gravel stock-piles (**Blue Jay,** 19:20-21) reminds me that I saw such in a pile at the Maple River west of Fargo several years ago. In this case I think the pile happened to be undisturbed for a few years. I suspect that one reason that gravel piles are not more commonly used by swallows is that they are heterogeneous. I have often noticed that on banks swallows use the sandy layers and avoid the more gravelly ones.—**O. A. Stevens,** State University, Fargo, N.D.

Dr. Nero's statement that gravel piles might prove precarious sites for nesting Bank Swallows (**Ibid.**) brought to memory an incident which happened in the summer of 1959. While working on a railway gang near Lestock, Saskatchewan, I noticed that Bank Swallows had tunnelled into a highway gravel stock-pile located close to the railway track. I mentioned this to a fellow worker who was also interested in natural history, as he, too, had never seen this type of nesting site before. As our work progressed I wasn't able to observe the colony any further but a few days later my friend told me that while passing by the gravel pile, he actually saw a section of the pile collapse, taking the colony with it. What a sight to see—frantic parents flying in all directions, with a cloud of dust, feathers and nesting material in the air!—**Bill Richards,** Saskatoon.

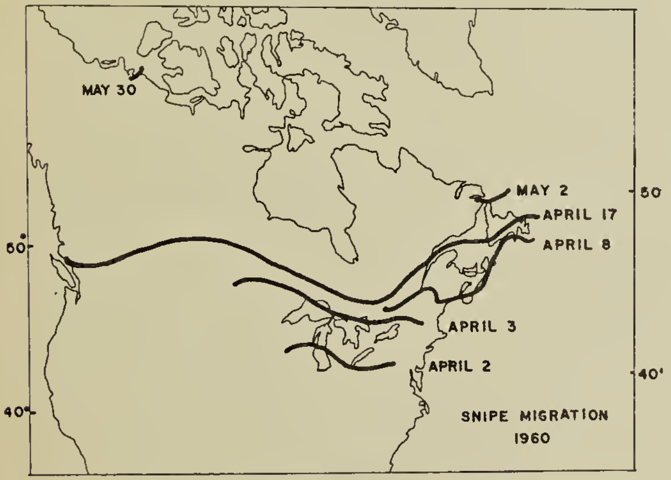
Observations of Bohemian Waxwing Behaviour

Waxwings bathing in winter.—On January 16, 1961, I was looking at my trapline in one of the coulees that runs into the Qu'Appelle Valley, when I came across a flock of about 150 Bohemian Waxwings. Most of them were sitting in balsam poplars but I was surprised to notice some bathing in the open water of a spring. This spring has a gravel bottom, and remains open all winter. About twelve feet away, where the water was 1½ inches deep and not running so fast, and near where it froze to ice, was where the waxwings liked to bathe. About six would go into the water at a time. They would duck under about six times and ruffle their feathers, then fly into the trees. I watched the whole flock do this and then they left. On this day it was 29°F., calm and cloudy, but the water must have been just about freezing temperature. I made a point to go back there every day for two weeks and found that the flock would come in between 1.00 p.m. and 4.00 p.m. to take their bath. However, they would not take a bath if it was really windy or below zero. I wonder if it is common for Bohemian Waxwings to take baths in cold weather?— **George Chopping**, Dubuc.

Bohemian Waxwings hawking insects in winter.—On the afternoon of March 21, 1961, I observed some unusual feeding habits of Bohemian Waxwings and Starlings at the Souris River approximately 1½ miles south of Estevan. The afternoon was quite warm and a large number of small moths were observed. The two waxwings and four starlings were perched in the tops of some aspens and at intervals both species would dart out and catch a moth in an almost flycatcher-like manner. They would chase the insect or hover momentarily as they caught it and would then return to the trees to eat their prey.—**Ross Lein**, Estevan.

INFORMATION WANTED

1961 COMMON SNIPE MIGRATION



Last year in the **Blue Jay** (18:78) I requested information on the 1960 spring migration of the Common Snipe (*Capella gallinago*). Persons who contributed information will be interested in the observations that can be made on the basis of data submitted.

It seems very likely that migrating snipe arrive first in the Great Lakes region with the early April warm fronts. Then, they move progressively northwards (or NE or NW) with subsequent warm air masses. The map shows the pattern obtained from data submitted in 1960.

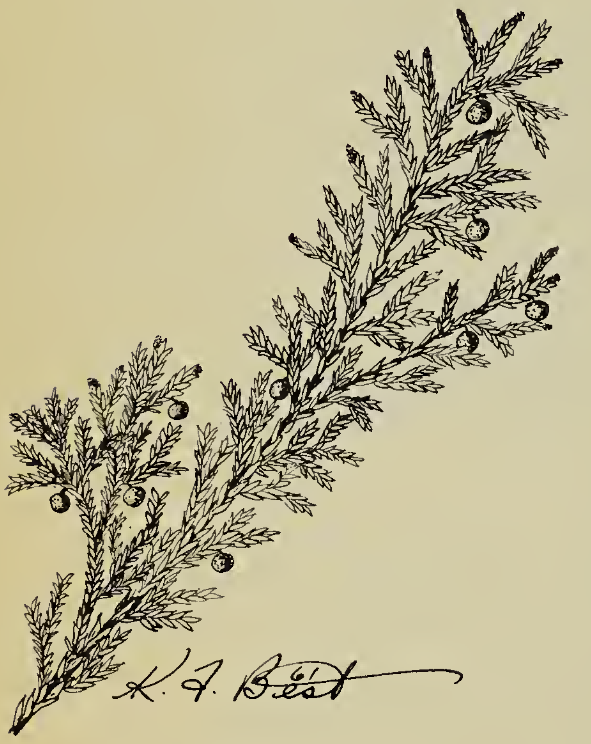
I am asking for information again for the 1961 spring migration. Please record locality, first arrival date, first winnowing date, peak arrival, first nest, comments, name and address of observer. In addition, I would like to get arrival dates for other years from people who have not previously submitted them, and any data on nesting. In Newfoundland where we have systematically searched our study areas, we find that the majority of nests are in high cover, such as alder. Finally, if you see "yellow" snipe, report them—they are birds marked with picric-acid for research purposes.

SEND ALL INFORMATION TO **Leslie M. Tuck,** Box E-5366, St. John's, Nfld. See also page 74.

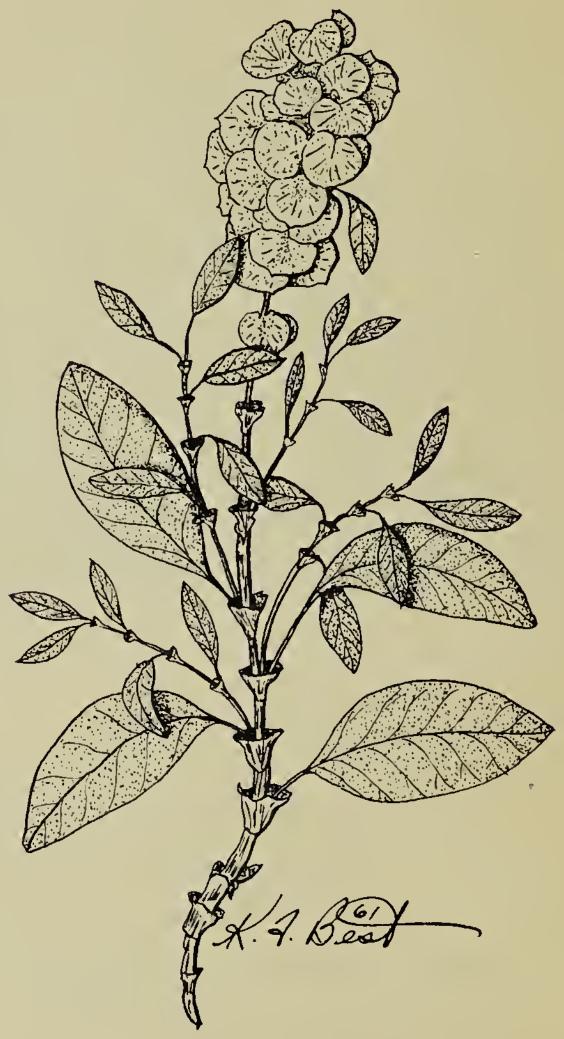
Sandhill Vegetation

by **Keith F. Best**, Swift Current

CREEPING JUNIPER



SAND DOCK



In the December issue we looked at the Prickly Milk-vetch and the Bur-ragweed, two representatives of our duneland vegetation. Leaving the duneland area and coming to what is known as the sandhills, we find changes in our vegetative cover.

A very common, low growing shrub found in the sandhills is the Creeping Juniper, *Juniperus horizontalis* Moench. This perennial species has long gnarled woody stems that spread out over the ground often to a length of 12 feet. The leaves are awl-shaped or scale-like and overlap each other. They are about 1/16 inch long and form narrow branchlets up to ½ inch long. The fruit consists of 3 to 6 fleshy scales, each containing a seed and joined to form a bluish, berry-like cone, about ¼ inch long. Large mats of this plant are often found on dry banks and sandy hill-sides and prove very effective in binding the loose soil.

Sand dock, *Rumex venosus* Pursh, is a perennial member of the Buckwheat family that is often an early invader of the shifting sand dunes. This species grows up to a height of 18 inches from running woody rootstocks. The sheathing stipules or ocrea are paper-like in texture, white and quite conspicuous. The pale green leaves are from 2 to 5 inches long and nearly half as wide. The flowers consist of 6 sepals, the three inner ones enlarging and forming wings or valves which enclose the fruit. These valves are large, often 1½ inches across, round and bright red to pink in color. The mature plants are often picked and dried to form winter bouquets. Sand dock is found on sandy soils, sand dunes and roadsides throughout the southwest.

Wild Pea-vine

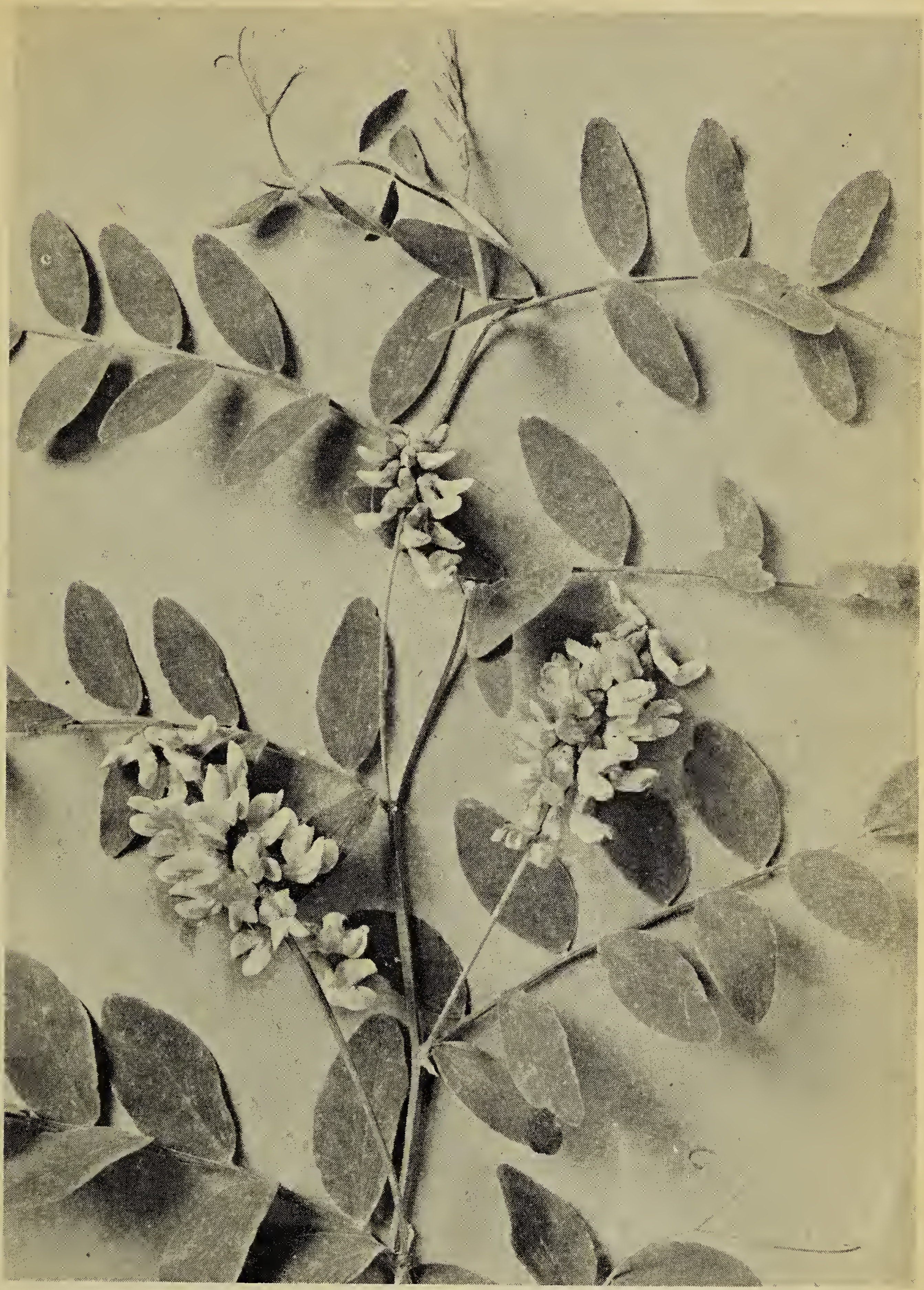


Photo by W. C. McCalla

Lathyrus venosus Muhl.

The Wild Pea-vine was a valuable source of forage and hay in earlier days of settlement, especially in the parklands of the prairie provinces. It is still abundant along the river banks north of Saskatoon where we can see it during the June meeting this year. This climbing plant has stout stems and rather pubescent leaves. The dense racemes of 10-20 flowers are a glowing royal purple.

Perfumed fungus on Arabis

by **Dorothea H. Calverley,** Dawson Creek, B.C.

There is a virgin prairie hillside near Dawson Creek where every spring the "crocuses" and a tiny lemon-yellow plant appear simultaneously. After five years of searching for this little plant in flower I decided to lift one in a piece of turf for transplanting to the garden. On the way home the car became filled with an exquisite and rather strong scent reminiscent of a very expensive face-powder. The perfume came from the bright-yellow leaves of this two-inch plant.

Transplanted, the plant became by autumn rather woody, almost normally green and about the diameter of a tea-plate. It persisted for two years, but did not produce flowers. It was identified as one of the Cruciferae in the genus *Arabis* by a U.B.C. botanist. The Research Branch of the Department of Agriculture advised me that the *Arabis* was diseased. The fungus is a rust probably *Puccinia monoica* (Peck) Arthur which has a wide range. It parasitizes *Arabis* and one or two other Cruciferae. I found it later on small Drummond's Rock Cress near Taylor, B.C. It does not occur on *Brassica* species in North America. The pycnial (spermagonial) stage of rusts often attracts insects, which can play a similar role in the life history of a rust as they do in a pollination of higher plants.

One very hot afternoon, in early June, 1960, I was attracted by a loud buzzing of a bumblebee, which was rolling and tumbling in an apparent ecstacy in and among the yellow leaves. He would fly off ten feet, only to return at once, and once more begin antics much like a cat in a catnip plant. I watched him for over an hour before he disappeared. Careful examination revealed no flowers at all, but the plant was highly scented, even when the leaves were not bruised. As the yellow appearance was a type of fungus, I destroyed the plant before bees could carry it to my rock-garden Cruciferae, or to the rapeseed crops.

For the purpose of attracting insects, this particular rust seems to have developed a very potent perfume in comparison with which even Chanel #5 should look to its reputation!

Blue-green Algae in Saskatchewan Lakes

by **U. Theodore Hammer,** University of Saskatchewan, Saskatoon

Teachers and students of high school biology as well as other naturalists may find it very rewarding to devote some time to the study of blue-green algae. These algae are found in most of the well-populated areas of Saskatchewan and are readily collected and easily studied with the aid of a microscope. Considered along with bacteria as very primitive plants, their characteristics are much more easily observed than those of bacteria and without the necessity of staining. In addition, they can be preserved for future use, or, in some cases, easily cultured.

The blue-green algae are a highly successful group of plants. They occur in extremely diverse habitats and conditions. These algae are found in inter-tidal belts of seas and salt marshes, are widespread terrestrially and are important constituents of free-floating (plankton) flora in all fresh-waters. They may occur in hot springs or under the ice during the winter. Most of them are free-living; some grow on animals while other grow on or in the tissues of plants. Some members of the group are the algal components in the symbiotic relationship of algae and fungi in lichens. Others even occur as parasites in the digestive tracts of man and other animals.

In Saskatchewan, although they occur extensively in the soil, blue-greens are most readily obtained from lakes. Algal "blooms" (heavy concentrations of algae at or near the surface) occur intermittently in many lakes during the summer and fall.

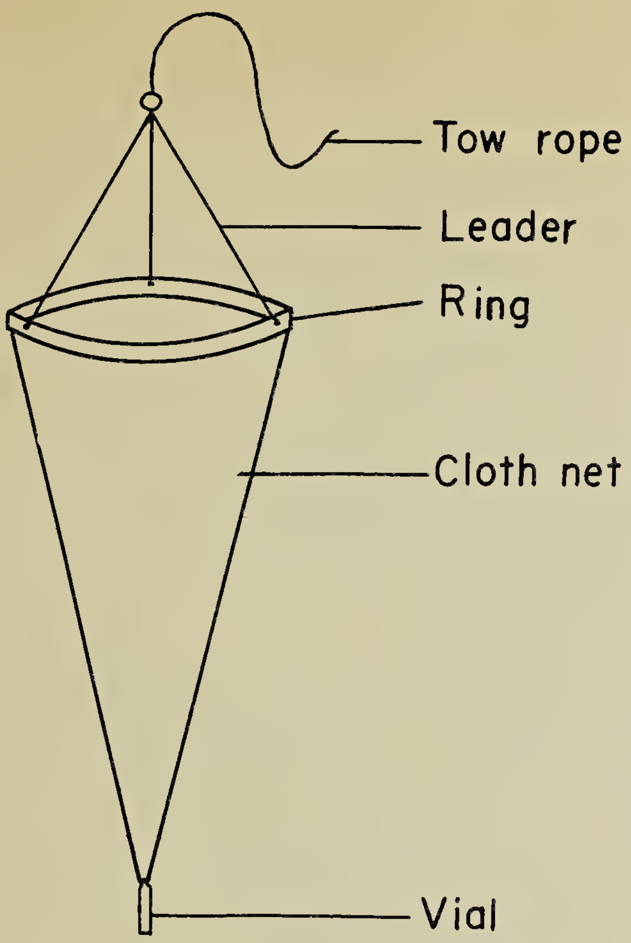


Fig. I

The Plankton Net

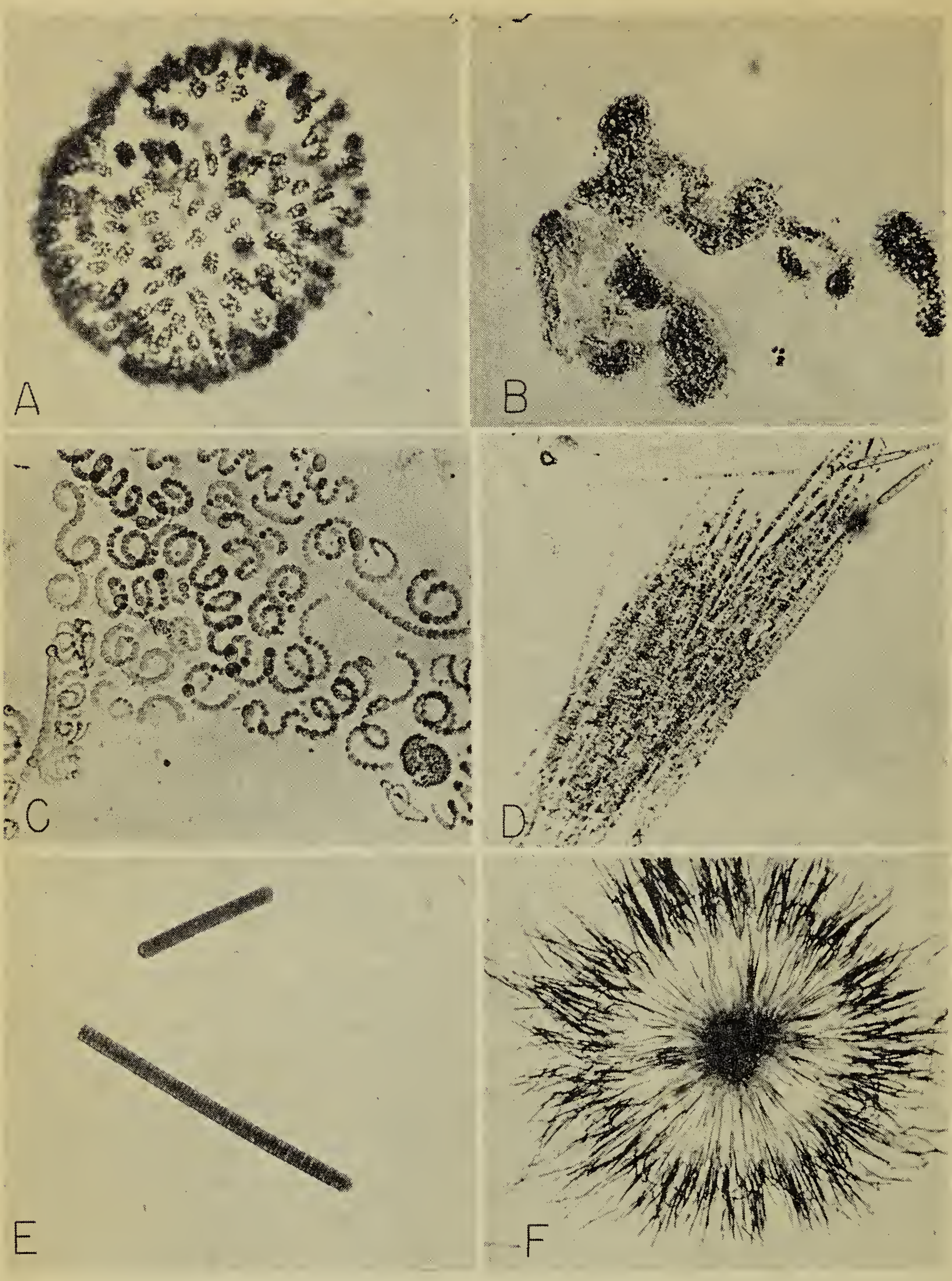
They are usually most abundant in the well nourished lakes of the prairie region but are occasionally common in lakes as far north as the Canadian Shield. Samples of these blooms may be collected along the shore where they tend to collect due to wind action or in small protected coves. Blooms, usually, tend to be made up of only a few species. A good sample may be obtained by the use of a fine-meshed cone-shaped net (Figure 1) pulled through the water or by pouring lake water directly through the net. If a test tube or vial is tied in the opening in the small end of the cone, the algae will collect in the tube. Nets may be constructed from about a yard of silk bolting cloth from flour mills. Bottom living forms can most easily be obtained by putting some bottom mud in a battery jar with lake water. A green mat consisting essentially of blue-green algae will soon cover the mud.

Blue-green algae are best observed in the living state. To ensure this the collecting bottle should not be filled more than one-quarter full and the cover should be removed as soon as convenient. Some forms, such as *Microcystis,* may be kept up to a year in an ordinary refrigerator. Others, however, soon perish under such treatment If it isn't practical to examine the material within a day or so of collection, it is best to preserve it. 3% formalin (3cc. commercial formalin in 37cc. of water is a general preservative. Formalin-acetic acid-alcohol (FAA) is the best preservative for plant materials. To 50 c.c. of 95% alcohol add 5 c.c. of glacial acetic acid, 10 cc. commercial formalin, and 35 cc. water. The preserving liquid should be used in an amount equal in volume to the volume of the material and its water medium. Cork stoppered bottles are preferable to screw cap bottles.

Blue-green algae are examined readily under the low power objective of a microscope. The material should be applied to the slide in minute quantities and covered with a cover glass. 5% glycerine may be added to prevent drying out. A high power objective is sufficient to observe most of the desired cell detail.

Blue-green algae make up the Class Myxophyceae of the Phylum Cyanophyta in the plant kingdom. They are thought to have existed in Pre-Cambrian times and are considered to be present in fossil form in very ancient strata. They have no true nuclei (that is, no nuclear membranes or nucleoli), no chromatophores and no sexual reproduction. The pigments are scattered in the cytoplasm and consist mainly of chlorophyll a, B-carotene, phycocyanin (a blue pigment from which they derive their popular name) and phycoerythrin, a red pigment. The colors of these algae vary considerably depending on the proportions of these various pigments present. Reproduction generally occurs by cell division and fragmentation of cell aggregates. In filamentous types spores called akinettes are produced. These akinettes can survive adverse conditions such as dessication and freezing. In some species ordinary cells can withstand severe conditions and then develop into new cells, as akinettes do, when more favorable conditions prevail.

The blue-green algae are arranged in two main groups. One group includes those which are unicellular or form simple colonies of cells. The shape of the colony is flat if the cells divide in two planes or tends to be



spherical if the cells divide in three planes. The cells are usually held together by a gelatinous matrix. The other group is made up of filamentous species formed by the cells dividing in one plane only. They may be unicellular and may be enclosed in a gelatinous sheath. The filaments may be aggregated to form a colony.

The first group is exemplified by *Microcystis,* two forms of which are shown in pictures A and B, and *Coelesphaerium,* shown in the lower right hand corner of photo C. This latter photograph, taken of a bloom in Lake Waskesiu, also shows three species of *Anabaena,* a filamentous genus. The larger cells present in the filaments are akinettes. *Aphanizomenon* is shown in photo D. It consists of filaments occurring in bundles which are readily visible in the water and look like leaf "cuttings". Four akinettes are also visible here. E shows some *Lyngbya* which formed extensive blooms in

Humboldt (Stoney) Lake in 1960. F illustrates an example of a colony of *Gloeotrichia* which consists of filaments extending radially from a mutual centre. To take the photograph the colony was crushed. *Oscillatoria*, photo G, is a common filamentous form occurring in lakes in the fall. It was abundant under the ice in Wakaw Lake in February, 1961. This genus is also interesting from the standpoint of being able to move freely. The movements are of two kinds. One is a horizontal, back-and-forth movement while the other involves a terminal waving of the filament.

Blue-green algae have presented several problems. They have a detrimental effect on resort areas when blooms form and collect in bathing areas. Besides affecting swimming, water skiing and fishing adversely, the decomposition of a bloom may result in obnoxious odor and appearance. *Aphanizomenon, Anabaena* and *Microcystis* seem to be the main offenders in this province. Algal toxicity may be associated with blooms. Five different species have been found to be responsible for animal deaths in different parts of the world. Although the five species occur in Saskatchewan only *Aphanizomenon, Anabaena flos-aquae* and *Microcystis* occur in sufficient quantities to warrant suspicion here. Cattle, horses, swine, dogs and fowl are all reported to have died after drinking water containing blue-green algae. However, even when these species are present, algal blooms are only infrequently toxic. To test for toxicity, white mice are injected with up to 1 cc. of the algal bloom into the abdominal cavity. If toxic it will produce death within a few minutes. In *Microcystis* the toxin is known to be a polypeptide. No cases of algal poisoning by blue-greens has ever been proved in humans although cases of enteritis (intestinal disorders) seems to incriminate them.

Water blooms lead to problems in human water supply as well. They may clog filters and produce tastes that must be removed in water purification plants. Where dense blooms occur the algae may use up the oxygen supply in the water for their own respiration during the night. This oxygen depletion may result in fish kills.

Copper sulphate (and other chemicals) can be applied to a lake to kill these algae. Although effective, its use is restricted by the high cost of purchase and application of the chemical.

Blue-green algae may be of some practical use. It is well known that some of them, such as some species of *Anabaena*, fix nitrogen in the form of nitrates. These are then available to other plants which may be important initially in the cycle of life in lakes and ultimately in fish production. This is made use of directly in the growing of rice in Asia. The blue-greens fix nitrogen which is then used by the rice. The algae are then eaten by carp which are utilized as food. Although they are ingested by rough fish in our lakes, it is not known whether they are actually digested by these fish and thus play a part in the food chain.

A knowledge of the Myxophycaea opens up one more segment of the living world, a segment which is filled with a variety of life forms of interest to the curious.

WEEPING POPLAR

Mr. B. Weber of Sedgewick, Alberta, sent in two pictures of trees growing in his pasture. These trees seem similar to typical poplars but they have weeping branches. Since it would be difficult to identify the poplars from the pictures Mr. Weber should send a pressed sample (flowers and fruits as well as leaves) to the Botany Department, University of Alberta, at Edmonton, or to Dr. E. H. Moss, 11101 87 Ave., Edmonton.

Junior Naturalists

Edited by **Joyce Dew**, Saskatchewan Museum of Natural History

Practice sketches of a dandelion plant

SUMMER TIME IS SKETCH TIME

Now is the time to take a sketch book (a writing pad with fairly heavy paper will do), a pen, pencil or crayon, depending upon your tastes, and sketch some of the plants and flowers you see around you. You needn't go far away—dandelions grow everywhere and provide a suitable challenge for any would-be artist. You needn't spend all afternoon wondering what to draw. Sit down on your own back door step and chances are you will have a plant within easy view so why not practise on it? The main thing is to get started and not to worry about results—artists throw away many more sketches than they keep. In one drawing class I attended we drew 10 sketches a morning, three mornings a week for eight months and all I saved from that entire class was 20 drawings. The rest were good experience but certainly not worth keeping. So please don't be discouraged if you don't like your first results, and don't let other people's opinions discourage you. You are the only one who knows if you get the results you are trying for.

By now I hope you are anxious to get started. Why not do a number of quick (2 minute) sketches first. In two minutes you can't worry about the details—those come later. You can, however, get the general feeling of the plant—its shape, the flow of lines and its general characteristics. Observe the plant carefully and ask yourself questions such as: It is tall and slender or short and dumpy? Do the leaves grow close together or is the plant loosely put together? What shape are the leaves?

By observing details such as these you can get a feeling for the general characteristics of the plant which will help you make it look "life like". If you are having trouble drawing a certain part of the plant, the leaves for example, then practise drawing the leaves alone for awhile. The dandelion plant in the illustration was arrived at after a number of quick sketches. Note the detail of a leaf drawn at the bottom. You are now ready to try drawing the plant in detail. As you do this, refer to the plant and to your previous sketches.

One last suggestion. If you find you can sketch better some other way than the one I've outlined, forget what I've been saying. The main thing is to go ahead and sketch. You will learn more by doing than you can from any number of "how to do it" suggestions.

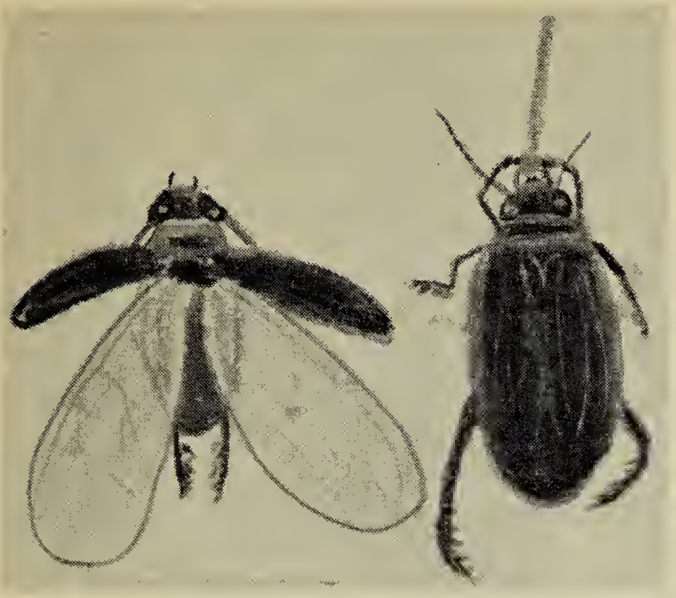
SKETCHING CONTEST

Rules:

1. Any boy or girl 16 or under may enter—all entries must be original (drawn by yourself from nature) and accompanied by your name, age and address.
2. Send in several of your best sketches. You can send in both completed drawings and quick sketches. Sometimes the quick sketches are better than the drawings you have worked hours over. Send in drawings of the whole plant, or a part of the plant such as flowers, by July 15, to Miss Joyce Dew, Museum of Nat. Hist., Regina.

KOKO THE PREDACIOUS DIVING BEETLE

by **June Martinsen,** Regina



I caught my pet, a predacious diving beetle, on January 15, 1961, at Rowan's Ravine. We were ice fishing there, and it swam up through our hole. Dad noticed it. I grabbed a cocoa cup and ran to the hole. As soon as I saw it, I knew it was a predacious diving beetle. I called it "Koko". I tried feeding it with my four goldfish when I got home. My favorite goldfish brushed his face with her tail and Koko attacked her. I separated them as quickly as I possibly could.

The next night I tried turtle food, goldfish food, a small dead crayfish I had found in the mouth of a yellow perch we had caught, and a goldfish. Koko ignored all but the crayfish. He lay on top of it, biting it. Whether he ate any of it, I don't know.

Every so often, he came to the surface of the water for air. Instead of poking his head up, he poked his tail above the surface.

One time he really frightened me. It was the first night I had him. Somehow he crawled out of his 5 inch high pen. I checked in on him the next morning and noticed him to be gone. I searched for 15 minutes and finally found him, asleep between a tin can and the wall. I promptly put him back in his half-land, half-water cage and put a screen over it. Several days later, I noticed a buzzing sound coming from Koko's pen. I investigated and saw that Koko was exercising his large, fly-like wings that he kept enclosed under his shell. Seven seconds later, he darted upwards. Did I jump! He landed on the screen, upside down, and crawling about on it. All this he had done in a split-second. Don't think that just because diving beetles live in the water that they can't fly or walk on land. They can do this as well as a bird.

Koko, a full-grown diving beetle, is 1¼ inches long and I'm warning you, when you pick up a diving beetle, keep away from its jaws. They're sharp and can hurt very much. Pick him up by his sides, your thumb on one side, forefinger on the other. Make sure your fingers are even with the base of his powerful hind legs. If he begins shoving with his legs, better put him down and get a fresh grip

P.S.—Just now I tried feeding him a piece of garlic sausage on a tooth pick. He **loved** it. Please disregard that statement about eating only in the summer. It is not true as I have just found out.

EARLY SPRING ARRIVALS

by **Kenneth Dickson,** age 13,
Tregarva

I guess you are right about me hibernating with the bears. Well this fall we had a mallard, 2 meadowlarks and 1 crow stay. I guess it was the mild winter. They stayed all winter, at least the crow and mallard did, but the meadowlarks were gone around the end of January. It was about the 15th of January when a neighbour shot the crow, but the mallard stayed in our open creek and I kept feeding him grains. It is nice to see the birds during the winter. This spring I saw one Killdeer on March 20th and one bluebird and one white-crowned sparrow. It is very early for the Killdeer to arrive. He was here last spring about the same time and I wrote Doug Gilroy* about it and he said it was early.

NOTE:*Doug Gilroy through his column "Prairie Wildlife" in the "Western Producer" frequently gives the "Blue Jay" a mention so we think it only fitting that Kenneth Dickson has mentioned him in his letter. Incidentally his column is worth subscribing to the "Western Producer" for.

NAME THE BIRD CONTEST RESULTS

The following Junior Naturalists had correct answers and received prizes for the Name The Bird Contest: Barbara Beatty, Sturgis; Vivian Hall, Whitewood; David Grout, Star City; Shirley Anderson, Rocanville; Donald Hrytzak, Yellow Creek; Bohdan Pylypec, Yellow Creek; Brenda Medlang, Sturgis; Louisa Mountain, Lloydminster, Sask.; Evert Anderson, Rocanville; Susan Anderson, Rocanville; Pat Earnshaw, Hudson Bay. We would like to congratulate these boys and girls on their excellent work and hope we hear from them again. The correct answers were: 1. Western Grebe. 2. Mallard. 3. Western Grebe. 4. Gray Jay. 5. Bald Eagle. 6. Mallard. 7. White-crowned Sparrow. 8. House Sparrow.

LETTER WRITING CONTEST

Any boy or girl 16 years old and under may enter. Entries must be first-hand observations and not something copied from a book or other source. All entries must be accompanied by the name, age, and address of the sender. Send entries to Miss Joyce Dew, Saskatchewan Museum of Natural History, Regina, to arrive not later than July 15. Prizes which are awarded according to age include Audubon bird calls and magazine subscriptions.

PRIZE LETTER

To June Martinsen goes the prize for her excellent letter and observations on a diving beetle. We had some very good contributions this issue and all boys and girls are to be congratulated. Keep up the good work.

AN ALBINO SPARROW

by **Bryon Lyster,** age 12, Abernethy

In early April when my family and I were coming home from a vacation with our relatives we stopped at Whitewood. While we were sitting in the car I noticed a white bird perched on the roof of a building about twenty feet away.

From where I was it looked about the size of a common House Sparrow. It was pure white with what looked like black feet and a black bill.

I had my camera in the car and just as I opened the window to photograph it—it flew away.

It was very very exciting for me as this was the first albino bird I had ever observed.

NOTE: Brian also mentioned in a letter that Ralph Stueck had been teaching him taxidermy and that he is also taking part in the Co-operative Spring Migration Study. Once again the inspiration of a local naturalist is helping to develop interest and enthusiasm in the young.

HORNED OWL'S NEST

by **Maureen Cyr,** age 13, Muscow

The other day my two brothers, Monty and Randy, found a nest which contained three Horned Owls. They brought one home which we fed some canned meat. The next day we brought it to school to show the children. The owl has very light gray feathers. It is about one week old. It is just beginning to walk.

WE SAW A BEAVER

by **Wanda Tennant,** age 10,
Neutral Hills, Alta.

One time Mom, Dad and I were going to town when we saw a beaver. The beaver was dark brown with webbed feet and a flat tail.

The beaver was by the fence when we came. Dad said it must be looking for a new home. For when a beaver is a year old it is sent away from the home where it was born. Then some horses came and sniffed at the beaver. The beaver hissed and slapped its tail on the ground and scared the horses away. They only ran a little ways away. We had to leave them then so we did.

WHOOPING CRANES SIGHTED

by **Lawrence Herperger,** age 13,
Muscow

This morning, April 12, 1961, I got up and was walking by a window at 8 o'clock. I glanced out and saw 5 huge birds heading northward over the Pasqua Indian Day School yard, about 300 yards away. They were all white with black tips on their wings. I called the rest of the family and they saw these beautiful birds also. My mother and father said that they were Whooping Cranes and that there were only 36 of them in North America. They started heading northeast, in the direction of Asham's Beach on Pasqua Lake. These were the first Whooping Cranes I have ever seen.

OBSERVATION OF PINE SISKINS

by **Dale Robinson,** age 11, Brandon, Manitoba

On March 15, 1961, a flock of Pine Siskins were around, singing in the spruce trees on the south side of our house. About April 1 we noticed a pair of Siskins still around. Even on April 4, which was a cold and cloudy day, they still sat in the crabapple tree and sang and sang. Then on April 4 we observed the female carrying grass and other materials to a branch in one of the spruce trees. On April 5 my friend and I watched them both make repeated trips to a nearby maple to get material from an old nest. On April 6, Mr. Lane* and I watched them both make the nest. On April 8 they seemed to have finished their nest. We heard the male singing on April 9 and then neither heard nor saw them for the next two days which were very cold. Today, April 12, was much warmer and when I came home from school at noon I saw the male singing in the maple at the front of the house. We didn't see his mate so we hope she is sitting on the eggs. Mr. Lane said it was very rare that they should nest this far south. We hope to get some pictures of them.

NOTE: Mr. Lane is an ardent Naturalist who is doing much to promote interest in nature among young people in the Brandon area.

OUR SQUIRREL

by **Joey Purdy,** age 11, Regina

My Grandmother and I live at Sandy Beach all summer. There's a wild red squirrel there that we have half tamed and, if she knows you, she will take a peanut from your hand and when she's hungry she climbs up to our screen door. Once we left the doors open and the squirrel took a notion to drop in. She came in while we were eating supper, sat down beside my sister's chair like a begging dog. My mother was sitting on the couch so she went to visit her, but someone moved and she scampered out. Her nest is in a tree beside the kitchen window, a branch from that tree reaches over to the roof, so every now and then we hear a scampering on the roof and it takes no guessing to figure out what it is. She stores some of her food in our shed. There's an attachment from the shed to grandma's room and if you wake up early in the morning you can hear her scampering back and forth from her nest to the shed. Once there was a big rat who stole all her food that was in the shed, so I got my BB gun ready and sensing danger the rat left. But there's one chief menace to our squirrel and that is a male red squirrel who always chases her as if he were jealous because she gets all the goodies. She sometimes goes out to the back of the cottage to the suncot where grandma sits. She will sit on her lap and eat peanuts from her hand and from her pocket, but always keeps an eye out for the male squirrel. And as if she had super hearing, even before the male appears she's off like a flash.

SNAKE ATTACKED BY SHREW

by **Donald Buckle,** age 14, Lady Lake

Last September 13 my friend Dean Panaliuk and I saw what appeared to be a garter snake catching a mouse. However, on closer examination we found that it was the snake who was being attacked by a shrew. The poor snake was trying to escape by climbing up into some small rose bushes. The shrew was not to be cheated out of dinner so easily. It hung on to the snake with its teeth and was hoisted about six inches into the air before it relinquished its grip. It then ran about under the rose bushes and in the surrounding grass for about five minutes before moving off. During this time the snake remained motionless about one foot up in the bushes. We caught the snake and found that it had received several small bites and was bleeding slightly through the mouth. I measured it and found it to be 23½ inches long. It was kept overnight in a cage and released the following morning.

THE FLIGHT

by **Pat Seifert,** age 10, Sudbury, Ontario

On a ridge, a caribou,
A silhouette, on a sky of blue.
Proudly he stands his head held high,
As the sinking sun colours the sky.

He perks his ear, "What's that he heard?"
Off he flees like a frightened bird.
Over a hill, over a dale
Over a river, over a rail.

Never stopping till he reaches the trees
There he stops to pant and wheeze,
Then he drops into a sleep
As, longer and longer, the shadows creep.

The deer is no longer on the run.
Up from the hills peeps the sun,
Off he goes to find some grass,
And drink from a pool as clear as glass.

Photo by Doug Gilroy

Albert Swanston and his Bobcat, Bredin, December 3, 1960.

SECOND BOBCAT COLLECTED NEAR REGINA

On April 5, 1961, Mr. B. Williamson found a Bobcat caught in a trap which he had set for Beaver. The Bobcat was reported as being an immature animal, possibly ¾ grown. The animal was caught in the Boggy Creek Valley about three miles north of the place where Albert Swanston of the museum staff caught his Bobcat (**Blue Jay,** page 41, March, 1961) which is shown in the photo above. Since these two Bobcats were caught less than five miles from Doug Gilroy's and since a Mountain Lion was also observed in this same area (**Blue Joy,** page 182, December, 1960) it is little wonder that Doug identifies his farm as being in "the land of the big cats."

Mr. and Mrs. John Hogg of Carnduff have written in to say that Bobcats have been reported seen in their area for about six years now. They are seldom seen but are believed to be fairly common in the area. The banks of the Souris River probably provide a suitable habitat for these animals.—G.F.L.

GRAY SQUIRREL AT OXBOW

On October 6, 1960, an unusual visitor, a Gray Squirrel, came and he has been seen almost daily until now, January 3, 1961. There are scrub oak along the Souris River near here so I suppose he came from there.

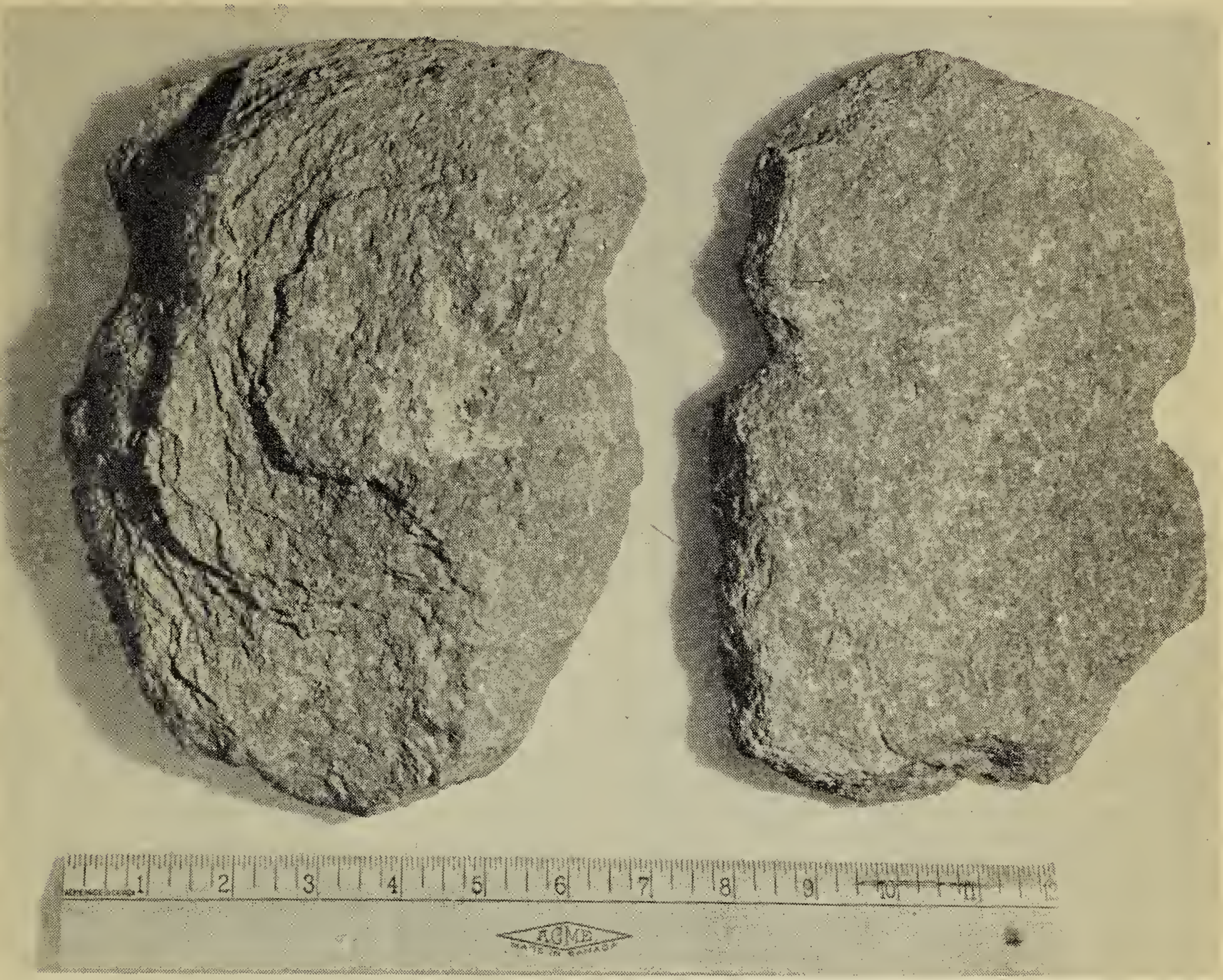
The Gray Squirrel has been seen coming out of a hollow Manitoba Maple which grows right beside the granaries where he feeds on the grain. We also see him perched precariously at the top of a maple eating seeds. Our little dog delights in chasing him but he just scoots up the side of the bin where he sits with his tail curled elegantly. I don't suppose we'll ever make a pet of him but we would like to.—**Mrs. K. D. Paton,** Oxbow.

HELPING THE BEAVER

Last fall we cut some trees in a little ravine a considerable distance from the creek. A beaver had cut some trees in the same area. His trees were just what we wanted so we "limbed" them ready to take away. We did not get back for a couple of days and when we did we found that the beaver had cut the trees into four foot lengths. I guess he needed them, too. When we saw a beaver out in January, 1961, we wondered if he was our friend of the previous fall.—**Mr. and Mrs. John Hogg,** Carnduff.

Large Stone "Hoes"

by **G. Watson**, Pense



Saskatchewan Museum of Natural History Photo

Large stone "hoes" from Squaw Rapids (left) and Grand Coulee (right).

I recently had the pleasant surprise of being presented with the above pictured artifact for addition to my archaeological collection. Herein is my thanks to the donors. Mr. Frank Vancise, whose farm is located southwest of Grand Coulee, found it while working a field on the NE½ of Sec. 20, T16, R21, W2 during the spring of 1960. Vancise presented it to Mrs. J. Smith of the Regina Rock and Gem Society. Mrs. Smith was kind enough to permit the author to place the artifact in his collection of Saskatchewan pre-historic material.

The artifact is a rather crude stone "hoe" made by placing rounded triangular notches on opposite sides of a leaf of foliated coarse-grained metamorphosed sandstone, which is peppered grey and white in colour. No lateral groove connecting the notches, which occurs on most "hoes," is discernible. The outer edge of the stone has been trimmed to shape by pressure-flaking. The flakes were removed on alternate faces and the whole abraded to a rough working edge. The lower right hand corner of the specimen has been broken laterally to the cleavage plane, suggesting a sharp glancing blow either in use or as a result of modern cultivation of its original resting place. As far as is known at this time, this artifact represents the only material from this locality; for purposes of cataloguing it has been given the Borden system #EcNf-1 and catalogued as #1 (EcNf-1/1).

A very similar artifact was discovered by Wally Mollberg of Nipawin, when accompanying Thomas F. Kehoe, Provincial Archaeologist, on a survey of the Squaw Rapids reservoir area in late May, 1960. Through the kindness of Kehoe, its description is included in this article.

This specimen is also a large pebble of foliated, coarse-grained, pink and black metamorphosed granite, with intrusive veins of quartz crystals throughout. The outer edge again has been roughly flaked to shape. The grooves and the somewhat pointed tip are the only areas showing rubbing action. The tip has had extensive use as there is a great deal of polishing in this area.

It will be noted that the term "hoes" has been used in the descriptions of these artifacts, until this type of tool has been more thoroughly studied in this area the term is arbitrarily applied. It is known that similar implements were used in agricultural pursuits in other areas of the world, but as yet insufficient numbers have been studied to prove or disprove their supposed use as hoes here.

DIMENSIONS IN MILLIMETERS

	Grand Coulee "Hoe"	Squaw Rapids "Hoe"
	mm	mm
Length	280.0	230.0
Maximum width above notches	145.0	164.0
Maximum width at notches	120.0	142.0
Maximum width below notches	155.5	173.0 tapering to 108.5
Depth of notches	13.5	11.5
Width of notches	32.0	41.0
Maximum thickness	19.5	54.0
Minimum thickness	18.0	29.0
	grams	grams
Weight	1,231.	2,813.

It is hoped this small article will point out again the importance and value of amateur collections as an aid to the professional archaeologist studying an area. Our duty as amateurs is to make sure he sees a neatly labeled, catalogued and stored collection, rather than an accumulation of "curios" and "Indian Relics." In this way we can contribute a small part to the story of Saskatchewan prehistory, now being written.

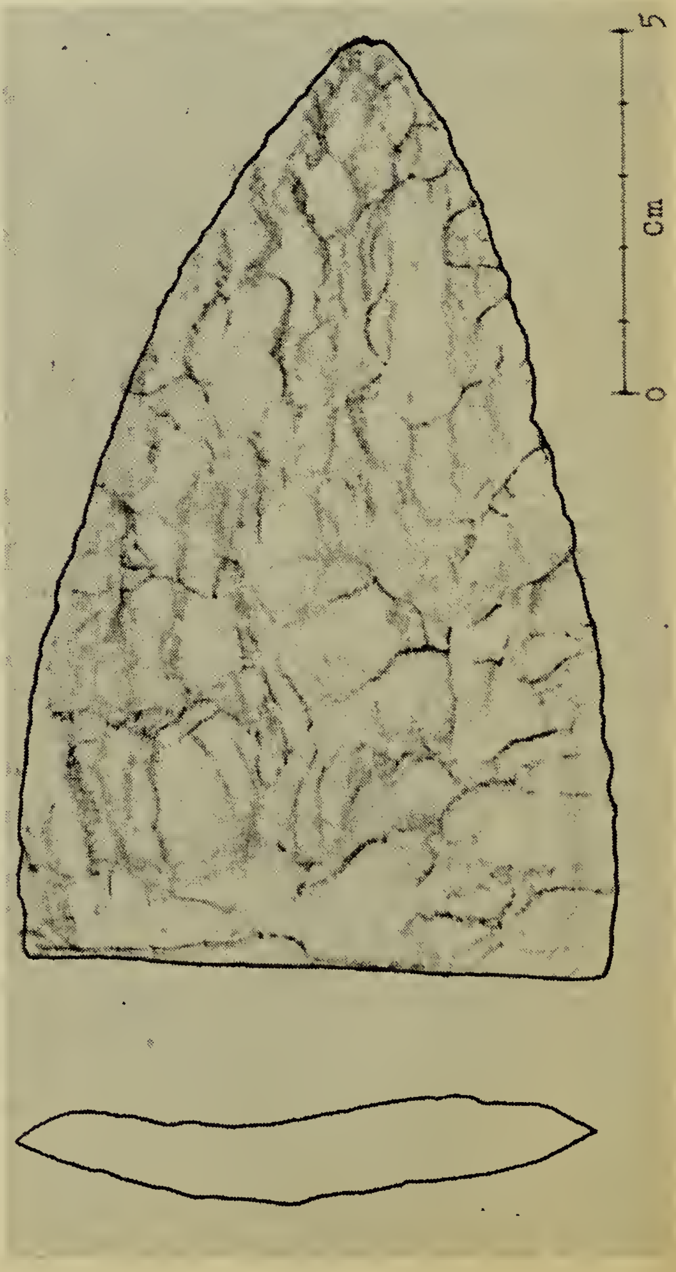
HUGE SPEAR BLADE FOUND

by **A. J. Hruska**, Gerald

A distal end of a spear blade of remarkably large proportions has been found in this district. It was found by Orton Buckberger on NW 9-20-32 W1 in the spring of 1960. It was found under a large boulder when stones were being removed from a cultivated field prior to seeding operations.

This specimen, of which only about three-quarters was found, is 12.8 cm long, 8.0 cm wide, 1.2 cm thick at the broken edge, and slightly thicker towards the point. It has a twist. The flaked edges are quite sharp. It is made of brown chalcedony (flint). It is our opinion that it was hafted and not used as a hand tool.

The land on which this artifact was found is classified geologically as moraine deposit, quite likely deposited by the last continental ice-sheet. The fact that this artifact was found under a large rock leaves us with the impression that it is of great age. Is it possible that the last ice-age covered this spear point indicating an aboriginal culture five times as old as either the Mortlach or Long Creek cultures?



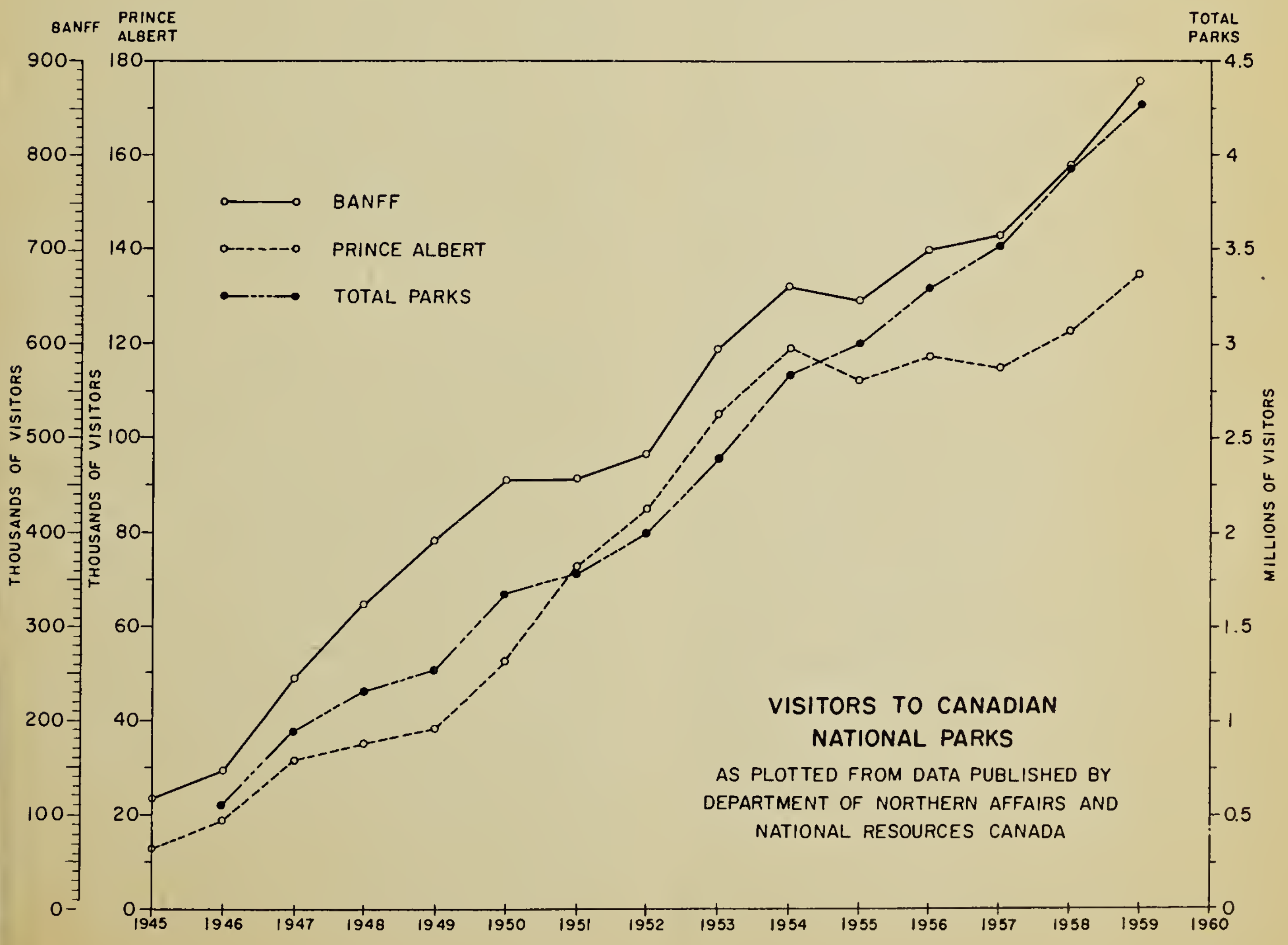
The Challenge of Park Development

by **R. L. Carter,** Department of Natural Resources, Regina

As another summer approaches, all park planners across North America are again aware, as they have been each year for the past ten years, that all the new facilities and all the new methods adopted to increase their ability to handle people in the parks will be inadequate in the face of the number of visitors expected.

The accompanying chart illustrates the increase in park use since 1945. On the average, attendance in the Canadian national parks has increased by approximately a quarter of a million per year, at Banff National Park by more than 50,000 people per year, and at Prince Albert National Park by about 10,000 people per year. Park planners fear such increases because they have never caught up with the demand, and they fear that the park environment will be spoiled if sufficient public money is not made available in time to provide facilities required to handle these crowds of people. Every new picnic area, every new beach, every building generates its own popularity, and as the word gets around, more people flock to the developed spots.

One of the factors that increases park attendance is the increase in leisure time. An established work week of 40 hours became general soon after the war. By 1985 it is believed that we shall have a work week of 32 hours, with increased paid vacations, perhaps one week of paid vacation every three months, and one month's additional paid vacation every year. The attitude that hard work is a virtue and idleness is sinful is likely to change as the opportunities for increased leisure brought by modern technology increase in number, and the "protestant ethic," as defined by Max Weber, dies out of North American society.



VISITORS TO CANADIAN NATIONAL PARKS

AS PLOTTED FROM DATA PUBLISHED BY DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES CANADA

Our tremendous mobility is a second factor influencing the demand for outdoor recreation on this continent. Marion Clawson, of Resources for the Future Inc., has explained that in 1956 North Americans were generally travelling 5,080 miles per year, and he felt that the average annual per capita travel in the U.S. would reach 7,700 miles in 1985 and about 9,000 per year in the year 2000. Saskatchewan residents are the most mobile in Canada, if mobility is measured by the number of people per vehicle owned. There are 2.7 people per vehicle in this province, as compared with the Canadian average of 3.5 people per vehicle. There is every evidence that we enjoy this mobility, and it looks as though the number of vehicles owned by the Canadian population will increase fairly steadily, perhaps reaching a figure of two people for every vehicle owned by the 1980's.

The income level, of course, strongly influences use of leisure time. The increase in real income per capita is close to 2% per year, and although it is hard to determine how much money is actually spent on recreation, probably between ⅓ and ½ of all money available for recreation is spent in the out-of-doors.

The final factor to consider in predicting the future use of our parks is the increase in population. The population of Saskatchewan grew by 2.4% from 1956 and 1959. We now have about 902,000 people. Over the same period, the population of Canada increased by about 8%. Therefore, although we are not likely to suffer the same strain on our parks as other parts of Canada, we must prepare for a general increase, which, when reviewed in the light of the few good sites available near the places where people live, makes park planning in Saskatchewan difficult. Because of our peculiar geographical setting—many people in the south with few recreational resources and few people in the north but ample potential for recreational use—the pressure applied by the above factors is magnified by the lack of good sites for large scale provincial parks.

There are three groups of parks in which the Provincial Government has a share of responsibility in Saskatchewan. The provincial parks, such as Moose Mountain, Duck Mountain, the Battlefords, are all vacation areas and areas used by the day tripper. Though their resources for recreation are not as abundant as that of the Prince Albert National Park, they are located in our best scenery. Generally speaking, they cater to Saskatchewan residents, and visitors from outside the province are few in proportion. Secondly, the regional parks, which will be scattered throughout the province when the regional parks scheme gets fully underway, cater to day trippers travelling not more than an hour from home. The Provincial Government gives financial assistance, but the affairs of each park—construction, maintenance, etc., are supervised by a regional park board of local people. Under the Act, the province shares the capital costs and assists with planning when asked. In the third category are the highway picnic sites, the historic sites, Trans-Canada picnic and camp grounds, etc. which cater to the travelling public.

Most people are familiar with the older parks, but perhaps few know of the facilities to be provided at Echo Valley, Buffalo Pound Lake, Pike Lake, and later at the South Saskatchewan Reservoir. These new parks will take some of the pressure off the populated triangle bounded by Regina, Swift Current, and Saskatoon, which has been singularly lacking in recreational opportunities in the past. It may be that the province is trying to make "a silk purse out of a sow's ear" at Pike Lake for the Saskatoon people who have so few recreational resources close to that city, but at Echo Valley, for example, the peninsula which extends out between Echo and Pasqua Lakes has some of the finest natural beaches in the south part of the province, and with the magnificent backdrop of the Qu'Appelle Valley, should prove to be one of our most beautiful parks, especially attractive to Regina residents. We are fortunate, indeed, to have a reserve of recreational land waiting for development on the South Saskatchewan Reservoir. There are many states in the U.S. at a complete loss how to meet the pressures I have mentioned above. At least in Saskatchewan we can see ahead for perhaps 50 years and know that we will have the lands available for development, even if we cannot expect adequate funds to make the best use of them.

The problems of pressure and finances are not the only ones which face the park planner in Saskatchewan. A tradition has grown up that part of our park lands should be sub-divided and leased for private cottage development; this is a very inefficient use of the land, compared with the use the public would make of an area of like frontage.

It is becoming extremely expensive to acquire land for new Provincial Park areas in Saskatchewan in the south part of the Province. Not only must the Province spend copious funds in developing parks, it must first spend many thousands of dollars in acquiring land on which to place each park. Though this problem is not proving insurmountable, the resources of a limited budget for park construction are obviously curtailed by funds required for the acquisition of land.

Lastly, and all too frequently, a lack of respect for the facilities provided is leading to tremendous problems in maintenance throughout our park system. No person in the province would wish to have his every action watched by a member of a park's staff, yet the amount of vandalism, the destruction of trees, the lack of attention to fires, the deliberate destruction of buildings, picnic tables, etc., might make this expensive policing necessary.

One other problem of special interest to the readers of this magazine must be faced in the near future. Little attention has been given, so far, to the creation of true wilderness areas. We work for wilderness preservation not primarily for the right of a minority to have the kind of fun it prefers, but rather to ensure for everyone the perpetuation of areas where human enjoyment and apprehension of the inter-relations of the whole community of life are possible, and to preserve for all the freedom of choosing to know the primeval if they so wish. Nothing like Bill S. 174, placed before U.S. Congress in January, 1961, has appeared in Canadian Legislation. I cannot do better than to quote from the preamble to this Bill:

"A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural condition and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive, unconfined type of recreation; (3) is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic or historical value." In northern Saskatchewan particularly, we have such areas. We shall not have them for many more years. Our roads are penetrating further and further north each year. Our logging operations are extending outwards from the inhabitated part of the Province. Tourists and campers are travelling northwards, certainly to enjoy the scenery, the fishing and the hunting, but not for the sole purpose of enjoying the solitude and the charm of the natural environment which this definition envisaged. We have the opportunity now to set aside areas to preserve these primeval characteristics. In ten, even in five years' time, the opportunity may be lost to us. Whereas parts of our parks, particularly Nipawin Provincial Park and La-Ronge Provincial Park, approach the definition, we have not yet considered wilderness in its own right, and must do so before very long. Where we have scenery of special character, such as the badlands of the Big Muddy country—which, although altered by grazing and other uses by man, are nevertheless close to the primeval in character—we should consider setting aside small representative areas of this landscape and exclude man's modifying influences from them.

The Blue Jay Bookshelf

FLORA BOREALI AMERICANA. By William Jackson Hooker. 1829-1840. Reprinted as Tomas v. Historiae naturalis classica, 2 vols. 1960. Weinheim, Germany; and New York, Hafner Publishing Co. Price: $55.00.

The recent issuance of *Flora Boreali Americana* as the fifth work of a new series of reprints of natural history classics, will be welcomed by serious botanists.

It first appeared in twelve instalments between September, 1829, and July, 1840, and was written by Sir William Jackson Hooker, then Regius Professor of Botany in the University of Glasgow, and generally regarded as the foremost botanist of his time. It was based on the plants collected by Dr. John Richardson, surgeon and naturalist to the first and second Franklin Arctic expeditions of 1819-1822 and 1825-1827, and Thomas Drummond, his assistant during the second expedition. It also lists some of the specimens collected by David Douglas on his relatively rapid trip across the prairies in 1827.

After years of search, I was able to complete my personal collection of the *Fauna Boreali Americana* (4 volumes: mammals, birds, fish and insects), though they are very scarce and very expensive. However, I was told that copies of the original edition of the companion *Flora* would be much more difficult to obtain and the price would be prohibitive—probably two thousand dollars or more if a copy should fall into the hands of a second-hand book dealer. Hence, even at about fifty dollars, the reprint edition is welcome.

The fact that a publisher in Weinheim, West Germany, should select this as the fifth in a series of reprints of natural history classics, is a good indication of the high regard in which Richardson's and Drummond's botanical contributions are held over a century later. One volume contains the text, while the quarto volume contains the 238 line drawings which are beautifully executed. A glance through *An Annotated List of the Plants of Saskatchewan* by Fraser and Russell, revised by Russell, Ledingham and Coupland (1954) shows that many of our Saskatchewan plants were named by, or for, Richardson and Drummond. Some of these were collected by Drummond in the Rocky Mountains or by Richardson at Lake Athabasca or in the Northwest Territories. Even eliminating these, one is left with a substantial list of plants which appear to have been first collected along the Saskatchewan River in what is now Saskatchewan, the majority at Carlton House. (John Hudson's encyclopedic knowledge was invaluable in "tracking down" many species now known by different names.) We know, for example, that the famous David Douglas (for whom the Douglas Fir is named) first collected *Pentstemon nitidus*, or Blue Beard-tongue in the Red Deer and Eagle Hills.

At Cumberland House, Richardson and Drummond collected: *Elmyus virginicus*, var. *submuticus*, Virginia Wild Rye. *Carex richardsonii*, Richardson's Sedge. *Oxytropis richardsonii*, Woolly Loco-weed. *Distegia involucrata*, Banks Involucrate Honeysuckle.

Along the Saskatchewan River and "Plains of the Saskatchewan," chiefly near Carlton House, the following were first collected: *Agropyron dasystachyum*, Northern Wheat Grass. *Calamovilfa longifolia*, Sandgrass. *Muhlenbergia richardsonis*, Mat Muhly. *Stipa richardsonii*, Richardson's Speargrass. *Juncus richardsonianus*, Richardson's Rush. *Nemexia lasioneuron*, Smilax. *Stellaria stricta*, Upright Chickweed. *Wahlbergella drummondii*, Drummond's Cockle. *Anemone richardsoni*, (Richardson's?) Anemone. *Aquilegia brevistyla*, Columbine. *Ranunculus cardiophyllus*, Heart-leaved Buttercup. *Arabis drummondii*, Drummond's Rock Cress. *Sophia richardsoniana*, Grey Tansy Mustard. *Heuchera richardsonii*, Alum-root. *Ribes hudsonianum*, Northern Black Currant. *Potentilla bipinnatifida*, Plains Cinquefoil. *Potentilla concinna*, Early Cinquefoil. *Astragalus aboriginum*, Atelophragma. *Astragalus lotiflorus*, Low Milk-vetch. *Astragalus pectinatus*, Narrow-leaved Milk-vetch. *Astragalus bisulcatus*, Gray Bisulcate Milk-vetch. *Astragalus succulentus*, Buffalo-bean. *Hedysarum mackenzii*, McKenzie's Hedysarum. *Lathyrus ochroleucus*, Cream-colored Vetchling. *Astragalus drummondii*, Drummond's Milk-vetch. *Vaccinium* *canadensis,* Blueberry. *Phlox hoodii,* Moss Phlox. *Phacelia franklinii,* Franklin's Phacelia. *Leucophysalis grandiflora,* White Ground-cherry. *Collinsia parviflora,* Blue-lips. *Pentstemon procerus,* Slender Beard-tongue. *Symphoricarpos occidentalis,* Snowberry. *Comandra livida,* Northern Comandra. *Comandra richardsoniana,* Richardson's Comandra. *Chrysopsis hispida,* Golden Aster. *Cirsium drummondii,* Short-stemmed Thistle. *Erigeron lonchophyllus,* Hirsute Fleabane. *Hymenoxys richardsonii,* Prairie Marigold. *Madia glomerata,* Tarweed. *Senecio canus,* Groundsel. *Townsendia sericea,* Townsendia.

This is a most impressive list of species new to science, especially when one considers that many of the specimens were collected under conditions of great hardship and danger, and then transported over a thousand miles by canoe! The re-issuance of *Flora Boreali Americana* is a fitting tribute to the early explorer-naturalists.—**Dr. Stuart Houston, Saskatoon.**

PRAIRIE WILDFLOWERS. By Lloyd **T. Carmichael. 1961. J. M. Dent and Sons, Toronto. Price $3.10.**

From the moment lavender drifts of crocuses highlight the sombre prairie landscape and all through the procession of plants that follow, the out-of-doors presents a challenge to anyone who is observant. How often have you wished for a book which named the common plants you see on the prairie and also carried photos of the living plants? Lloyd Carmichael's *Prairie Wildflowers* comes to answer this wish.

The author is a former science teacher at Scott Collegiate and former editor of the **Blue Jay.** The book is the culmination of twenty-five years of collecting, recording and photographing. As a plant collector, Mr. Carmichael has contributed a thousand sheets of his plants to the herbarium of the Saskatchewan Museum of Natural History.

Each page of the book is designed as a unit, the short, concise notes supplemented by photographs making recognition simple. Then the book is divided into sections representing the flowering seasons—from "catkin and crocus time" and "violet time" on until the gold of September ends the parade. The author throughout associates the flowers with their companions at blooming time as well as with their particular environment. Roughly 200 of the commonest flowering plants of the prairies were chosen for the book.

The hard cover, with its distinct and beautiful pitcher plant, may surprise some. While it makes an attractive cover illustration, the pitcher plant grows in cold bogs and is not typical of the prairies.

The book will fill a need. For the plant lover, it will be a delightful acquisition of engrossing interest; for the teacher it will be a helpful handbook of authentic information including Latin as well as common names, and glossary.

The book was written with obvious affection for and delight in the plants of the prairies. We congratulate the author most heartily and sincerely. — **Elizabeth Cruickshank,** Regina.

NOTICE TO ALL S.N.H.S. MEMBERS COMING TO THE SUMMER MEETING, JUNE 16-18

1. Please register on Friday evening between 8.00 and 10.00 p.m., School of Agriculture Building, University of Saskatchewan campus.
2. If you intend to stay at the School of Agriculture Building, write **at once** to Frank Roy, 120 Maple Street, Saskatoon, specifying the type of accommodation required. Single rooms, $3.25 per day; sharing $2.75.
3. A $2.00 meal ticket (for noon and evening meals Saturday) will be sold Friday night. If you can't register by 10.00 p.m. Friday, notify Frank Roy by letter and he will set aside meal tickets for you.
4. Breakfast will be available Saturday morning between 7.00 and 8.30 at the Sutherland Esso Service Station (30 places), three miles east of Sutherland on Highway #5; and at Bainsville B.A. Service (12 places), 9 miles east of Sutherland.
5. For detailed programme plans see the March issue of the **Blue Jay.**
6. Copies of **Birds of the Saskatchewan River, Carlton to Cumberland,** will be available at $1.50 and copies of the new revised Peterson's **Field Guide to the Western Birds** will be on sale at $5.95 at the Friday evening meeting.

Tour Guide to the Carlton Area, June 17

by **Stuart Houston,** Saskatoon

The area in western Canada of greatest historical significance to naturalists is the area lying south of Carlton between the two branches of the Saskatchewan River. By coincidence., this area also happens to contain the main sites of historical interest connected with the Riel Rebellion. It is readily apparent that the S.N.H.S. summer meeting, which will visit this area on June 17, will have a strong historical flavor.

Bird watchers will be interested to know that the first scientific descriptions of the Olive-sided Flycatcher, Gray-crowned Rosy Finch, Clay-colored Sparrow and Smith's Longspur were based on specimens collected in the Carlton area by Dr. John Richardson and Thomas Drummond over 130 years ago. In addition to these four species, Carlton is also the type locality for subspecies of the Loggerhead Shrike, Swainson's Thrush and Rufous-sided Towhee, Swainson's Hawk. Further the Carlton specimens of Northern Hairy Woodpecker, Richardson's Boreal Owl and Richardson's Pigeon Hawk were the first to be described, though they were not recognized as new forms at that time.

Carlton House is the type locality for all three of our "gophers"—Richardson's, Franklin's and Hood's Thirteen-striped Ground Squirrels—as well as for the Northern Pocket Gopher and the White-tailed Jack Rabbit.

An impressive list of flowers, first collected in the Carlton area, will be found in the review of *Flora Boreali-Americana* in this issue.

The all-day tour will visit the following points of geographical interest:

Clark's Crossing: Where the Dominion Telegraph Line crossed the South Saskatchewan River in 1876, and where General Middleton's forces ferried the river on April 20-21, 1885.

Fish Creek: Here General Middleton's troops were ambushed by Gabriel Dumont's men on April 24, 1885. A cairn and park have been established at the cemetery site.

Gabriel's Crossing: The ferry here was first operated by Gabriel Dumont, the famous Metis leader, in 1877.

Batoche: Here the Carlton Trail crossed the South Saskatchewan; the Hudson's Bay Company maintained a boat here as early as 1841, and the first ferry service in the Northwest Territories was established by Batoche Letendre in 1871.

Batoche was the headquarters of Louis Riel's 'provisional government". Here the Metis lowered the ferry cable on the river steamer Northcote which was bringing reinforcements for Middleton's troops they succeeded only in shearing off the Northcote's smokestack and pilothouse.

The trenches of the old battlefield are still visible. Here General Middleton finally defeated the Metis on May 15, 1885, after four days of fighting.

Gabriel Dumont's grave may be visited at the cemetery. Many articles of historic interest may be viewed in the Batoche Museum.

Duck Lake: West of Duck Lake is the battlefield where, on March 26, 1885, occurred the first combat between Canadian Government forces under Major L. N. F. Crozier and the Metis and Indians under Gabriel Dumont. The local historical museum is well worth visiting.

Fort Carlton: An important Hudson's Bay Company fort from 1810 until it was destroyed by fire during the Riel Rebellion on March 27, 1885. It was a stopping place on the "river highway" of the early fur traders. Later, the Carlton trail was the busiest section of the great overland route linking Fort Garry with Edmonton House. Part of the original trail is still used.

Nearby, a cairn marks the site of "Carlton treaty No. 6" where the Crees surrendered their rights to 120,000 square miles in August, 1876.

Seager Wheeler's farm: Here Dr. Wheeler developed Marquis wheat and five times won the world's wheat championship.

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NOTICE TO MEMBERS

The **Blue Jay** is sent only to members who have paid their fees. If you know of anyone who has not received this issue remind him to send in his membership immediately. By each member supporting the society and finding new members we hope to keep this a vigorous actively growing organization. Remember you are getting more than a magazine. You are a part of an active conservation organization.

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All persons interested in any aspect of nature are invited to join the Saskatchewan Natural History Society. Membership dues per calendar year are: Regular, $2.00; Junior (including schools), $1.00. The **Blue Jay** is sent without charge to all members not in arrears for dues. Send your membership to the treasurer, Mrs. Grace Steele, 3603 Caen Ave., Regina, Sask.

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